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GRAND PRIX
INTERNATIONAL

10

"MONTE PEUGEOT" RALLY
1 down, 11 to go!

F1 TRACK TEST
RAM 02

DAYTONA 24 HOURS
Porsche supreme

M 1484 - 90 - 20 F

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At times we've all felt the urge to drive faster than we should.

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The Daytona 24 Hours kept the spectators waiting with baited breath until the very end. A great victory for American drivers, Foyt and Unser. Just as well that Wollek and Boutsen were there to help out the Valvoline Porsche. Europe Assistance!

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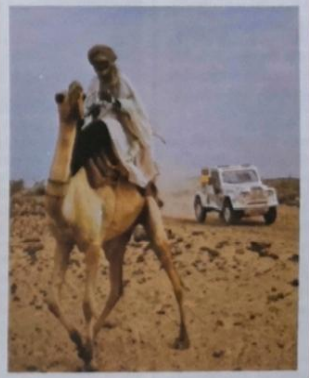
PARIS-DAKAR

The Paris-Dakar in pictures. This gruelling 8,750-mile rally has become a colossal commercial affair-even show-biz stars are taking part. But the going's tougher than you may think.



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You will find the GPI subscription coupon on page 84.

Grand Prix International on sale every month

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TOPICS

BP England, the oil company which helped launch Warwick, Palmer, Brundle and Dumfries to fame, has decided to stop backing motorsport.

American racing is looking up. A record 4,983,000 spectators paid to watch their favourite sport during 1984 — 242,000 more than in 1983.

Serious talks are still taking place concerning the possible staging of a F1 GP through the streets of Budapest in Hungary. The main problem still remains, finding £1 million to finance the project.

Malasia has expressed its desire to act as host to a WEC round. Apparently, MRC (Motor Race Consultants) are taking care of the organising and the date has already (!) been fixed for either November 17th or December 1st of this year.

French F1 driver, Alain Prost, will not be taking part in the 1985 IROC championship. AJ Foyt has been called in to take his place.

Martin Schanche, the quadruple European Rallycross title holder form Norway, is to begin Endurance racing this year at the wheel of a Group C2 Toj. His maiden-race is planned for Mugello on April 14th.

Peugeot will be taking part in all the World Rally Championship rounds during 1985 and have also announced plans to continue in 1986. Rumour has it that Jean Todt has been thinking about F1 for 1987.

MARCH 85C

The latest offshoot from the Bicester single seaters destined for the American CART series, comes in two versions. The version for road or classical circuits is priced at $137,000 and the oval circuit version will cost you a little more —$148,000. The engine is not included in the price. It's common knowledge that March have found a profitable market on the North American continent, although despite its superiority in numbers last year on the starting grids, Lola pocketed the title. The two British constructors have, however, caused an upheaval in that Penske, Eagle and Wildcat no longer dominate the scene.

With a record of two consecutive victories at the Indianapolis 500 Miles, the doors to a larger market opened automatically and orders totalling $ 5 million have been placed with the British company which employs a workforce of 125. Four March 85Cs have already been delivered, which brings the total of Indy race cars built since 1981 (year when they were first raced in the States), to 100. March have been able to erase the bitter taste of their F1 attempt and have now established a record of 22 wins in F CART. At the last 500 Miles, 30 of the 33 drivers present on the grid were driving Marches and 14 of the cars classified at the finish were from the Bicester workshops. To this feat, you can add the pole position, the fastest outright track record, the record for the four-lap qualification and the highest average race speed.

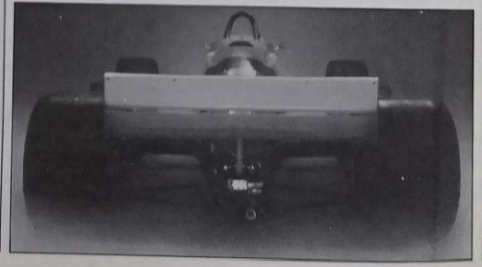
The 85C was designed and constructed by Robin Herd and Adrian Newey. It underwent crash testing at speeds of up to 320 kph/200 mph, following allegations that the F Indy single seaters were not sufficiently resistant last season.

The main differences with last year's version are that the 85C is a little lighter on the scales, streamlining has improved and strengthening panels have been added to the footwell area — the most vulnerable on the oval circuits. New suspension mouldings have been fitted as well as a retractable foot pedal for hard shocks. The centre of gravity has been lowered as a result of placing the fuel tank lower down and behind it, the oil tank, which is no longer placed on the gearbox. The wheelbase on this year's version is an inch shorter. The rack is placed ahead of the axis of the front wheels and the driving position has been entirely revised. Rigidity has also improved — torsional stiffness has been made twice as strong. The whole car weighs 15 kilos less this year.

Suspension geometry is identical to last year's — double wishbone to the front with rocker arm to the rear, incorporating an inboard spring/damper combination to channel the airflow. The new wheel hubs are lighter and brake cooling is more efficient as a result. March decided to construct its own differential following the high number of transmission failures, but *"Salisbury"* and *"Torsen"* units are still available. By repositioning the oil radiator, the Cosworth DFX engine can be assembled lower down (12.5 cm/7.5 ins), but is more upright. As a result of the new rules, the aerodynamics had to be rethought with tests through the wind tunnel.

Main dimensions : Wheelbase : 275.5 cm/110.2 ins. Front and rear track : 165.0/157.5 cm, 66/63 ins. Overall length : 4,500 mm/180 ins. Overall width : 2,000 mm/80 ins. Weight : 703.06 kilos/1,550 lbs.

The first of the March 85Cs was to sent to *"Patrick Racing"* team whose driver is the double world champion, Emerson Fittipaldi.



FRANZ KLAMMER - FROM SKIS TO CARS?

We have been informed that the Austrian ski champion, Franz Klammer, might well try his hand out at motor racing this year! Apparently, the mighty Klammer was most impressed when he tried out a FF1600 recently and will soon be informing Helmut Marko whether he has accepted his offer to drive a Group A Alfa Romeo GTV 6. Peter Oberdorfer should, to all intents and purposes, be named as the second driver, having put in some fantastic results in the European Renault 5 Trophy.

BALESTRE V AC MONACO con't!

After the Monte Carlo Rally, that very nearly didn't take place, FISA president JM Balestre recently clarified the situation which has the FIM opposing the AC Monaco, concerning the Monaco GP which should take place on May 19th.

"I sincerely hope that the GP takes place and that it will be included in the world championship. However, the AC Monaco must first respect the Concorde agreement with regards television rights. It must end its privileged contract with the American TV station, ABC."

Michel Boeri, the president of the AC Monaco had this to say: *"That has all been cleared up now. It's imperative that a decision be made rapidly. There are technical problems to be solved, for instance the setting up of grandstands to seat 24,000 spectators. We've many ideas on how to develop the GP's image, but we can't keep banging our heads against a brick wall. The GP must take place."*

THE SILVER FOX IS BACK

David Pearson, alias Silver Fox, the 1966, 68 and 69 NASCAR champion and record holder for the most wins after Petty, has announced his return to Grand National racing this season.

LANCIA — BACK IN F1?

The Italian constructor has plans to supply F1 power plants. According to our information, the engine would be a 1500cc derived from the 1800cc-base featured on the Delta S4 (see GPI No 89) or a developed Lancia Endurance engine... ie, of Ferrari extraction!

BUDAPEST — F1 SHOW

Bernie Ecclestone, the president of the Formula One Constructors Organisation (FOCA), declared during a short journey to Budapest that *"Hungary is in with a good chance of hosting a Formula One Grand Prix."* The FOCA president added that *"The Hungarian officials will announce their final decision within two weeks, once they have found backers willing to finance the organisation of the race."*

SANDRO MUNARI — FROM RALLIES TO CIRCUITS

Italian rallyman, Sandro Munari, who chalked up some brilliant results for Lancia at the wheel of the Fulvia, and later the Stratos, announced his retirement from rallying when the Stratos was also pulled out. He took part in a few rounds of the World Rally Championship (Dodge Ram Charger, Porsche and Alfa Romeo at the Safari), but no longer as a works driver. Today, at the age of 45, he has been nominated to replace Casoli on the F1 Euralfa team as the competitions director.

ROME GP THREATENED

News has reached us that the Rome GP, scheduled for October 13th, may be cancelled. It appears that for safety reasons, a number of trees must be felled and the ecologists have expressed their opposition. The local authorities are also firmly against the GP taking place through the streets of Rome.

NOW OR NEVER

Every year, more and more motor sport fans flock to the circuits and attendance figures have rapidly shot up as the public is made aware of the variety of charms which top level world-wide motor racing offers.

During the 1984 US track season, 4,983,000 admission tickets were sold; 242,000 more than during 1983. The booming interest in motor sport is a phenomenon that also occurs outside the confines of a circuit. International rallying too, attracts an increasing number of spectators at each round. The recent Monte Carlo was a tremendous record-beating success, even the rally drivers themselves were caught up in traffic jams on their way to the stages. Others, like this year's winner, Ari Vatanen, were involved in unfortunate incidents through no fault of their own, as ignorant and wanton spectators wandered heedlessly along the roads, a free ticket to the most dangerous areas in their pockets. The problem of spectator safety is now non-existent on the circuits, but every year, disaster is too often missed by inches at important rally events. The Monte Carlo spectators were decidedly more fortunate than they can have realised as they lined the roads with the cars hurtling through the human corridors — an error and there would have been more than just a broken leg to lament.

Controlling the crowds is well-nigh impossible on the open roads (remember the photos taken at the Portuguese and San Remo Rallies). Rallying enthusiasts must be made to realise that rallying can be a dangerous form of motor racing. Something must be done, and rapidly, so that they learn where and how to watch rallies, with minimum risk both to themselves and to the drivers. Make no mistake, a tragedy and the entire world of rallying will be held responsible.

The international sporting bodies and the media are the only effective means of educating the spectators. Here at GPI, we feel that the alarm should be raised before a catastrophe occurs. Perhaps once the president of the International Federation has ceased with his personal vendettas and court cases, he will think about taking the right steps towards enforcing spectator safety on all major rallies.

TOPICS

British motorcycle star, Barry Sheene, is going to try his hand out at motor racing this year. The 34-year old ex-world champion will be taking part in the Groupe A Trimoco series.

Colleague, Alan Henry of Autosport, was awarded the Pierre Dreyfus trophy for his Book, "Ferrari", published by ACLA.

The Williams F1 team have just hit the big time. Canon have agreed to sponsor the team and have signed a contract worth £1.5 million for this season. Money for thought...

Alessandro Nannini's application for a super licence has been refused. He will be replaced in the F1 Minardi by last year's European F3 champion, Peirluigi Martini.

Last year, Shell sponsored the McLaren team at selected rounds of the F1 championship. This year, the red and white cars will be sporting the Shell colours throughout the season.

Warner Hodgson, a regular NASCAR competitor with the Bud Weiser outfit, with Junior Johnson as his team mate, has been declared bankrupt. Hodgson, who owns several circuits, (Bristol, Martinsville and N Wilksboro) is in debt for some $62 million.

Cathy Muller will be joining David Price's team to take part in this year's British F3 Championship. She is the second French lady driver to further her driving career in the UK after Michèle Mouton, who will be driving a David Sutton-prepared Audi Quattro in the Open Championship.

At a recent testing session on the Phœnix circuit, Michael Andretti got behind the wheel of a new March 85C/Cart running on very ordinary tyres. Andretti Jr came close to the lap record, held by Jacques Villeneuve, 24.4s, compared with 23.1s.

Eggenderberg, the famous Swiss preparer, is leaving BMW in order to prepare Volvo turbos, with the help of the Swedish constructor.

JOHN PLAYER SPECIAL TEAM LOTUS

John Player Special Team Lotus chief Peter Warr, described the new Lotus Renault 97T as *"A stronger, more refined and developed version of an already good car".*

The car recently passed crash tests *"with flying colours"* and all nose boxes will now be driven at 10 metres per second into a concrete wall, together with the front of a new chassis, on a sled weighing 780 kilos.

JPS have put in a great deal of work into their chassis during the off-season. Technical director, Gérard Ducarouge, and Chief Designer, Martin Ogilvie, are extremely proud of their new *"home baked"* carbon fibre design. The car's aerodynamics have been improved on, together with the suspension. Being both more compact and sleeker than its predecessor, JPS claim that the 97T weighs in at just 540 kilos — the minimum weight limit. A stronger Lotus gearbox and carbon fibre brakes will also be featured throughout the season.

Ayrton Senna, the revelation of last season (3rd at Estoril), has been pronounced fit to begin testing. The 24-year old Brazilian has spent two months recovering at home in Brazil, from a nasty virus infection. He has begun an intensive training programme. *"I have had two months without exercise, so I'm trying hard to compensate for the enforced lay-off. What I really need most is to drive the car, starting with the important Rio tests."* The new JPS team driver added, *"From my experience during last season, I realised that I had been trying to drive 100% the whole distance, just as I had been for shorter F3 and FF events. Now, I don't think that's possible — I don't care how strong or fit the driver, you can't drive flat out the whole distance."*

John Player Special 97 T
Technical description

Main dimensions: Overall length: 422 cm. Overall width: 215 cm. **Weight:** 540 kg. **Wheelbase:** 272 cm. **Track:** Front - 181.6 cm. Rear - 162.0 cm.
Engine: Renault V6 Turbo.
Clutch: 7.25" (18.4 cm) diameter twin plate automotive products hydraulically operated by an annular coaxial slave cylinder machined into the bell housing.
Gearbox: Team Lotus designed and manufactured using some Hewland internals.
Wheel bearings: Front — double row angular contact roller bearings. Rear — double row angular contact roller bearings.
Brakes: Front and rear — outboard single caliper Lotus/Brembo brakes operating on ventilated SEP carbon discs.
Wheels: Front — 13" diameter x 11" to 12" wide. Rear — 13" diameter x 16.5" wide.
Tyres: Goodyear Radials.
Front suspension: Fabricated steel wishbones with pull rod operated inboard spring damper units and wide base lower wishbone. Cast magnesium uprights. Driver adjustable front anti-roll bar.
Rear suspension: Fabricated steel rockers and wishbones, with a rocker and pull rod operated inboard spring damper unit. Fabricated steel uprights.
Dampers: Gas/hydraulic supplied by Koni.
Chassis: Carbon fibre/Kevlar skins with aluminium honeycomb monocoque, and Kevlar rope reinforcing.
Fuel cell: ATL single rubberised fabric cell located behind the driver within the main structure.
Bodywork: Kevlar one piece nose cockpit surround and tail. Carbon fibre flat underbody.
Wings: Carbon fibre, adjustable main elements and trim tabs front and rear.
Cooling: Combined water oil coolers and air/air intercoolers symmetrically mounted on either side of the chassis.
Lubrification: The oil tank is incorporated within the bell housing between the engine and gearbox.
Life support system: The car is fitted with fire extinguishers for the cockpit and engine bay and a helmet air supply system.
Electrics: As specified by Renault.

BBS REWRITE THE STORY OF THE WHEEL. IN THREE PARTS.

This is the BBS RS 3-part wheel.

As you can see from the illustration below, it has a split rim, so it weighs considerably less than ordinary alloy wheels. True to form it also runs far, far more precisely. (After all, we build the wheels used by Porsche when they win Le Mans and by BMW on their very high performance 635 CSiM.)

The RS wheel is not only built to the most exacting standards possible, it's also built to BBS standards. So high are these, we insist on making all 32 bolts on the wheel ourselves.

We then drive it more than 1200 miles, carrying two and a half times the normal wheel load.

We simulate cornering 800,000 times at high speed. To gain the much prized but seldom awarded TUV approval from the German government, we need only have done so 200,000 times.

We then spray salt for 300 hours to be sure every wheel will resist corrosion. We even X-ray the centre looking for the minutest flaw. Finally, we give every wheel a two year guarantee.

Not surprisingly, the RS wheel is the only 3-part wheel to achieve TUV approval.

At £200 a rim, it's not only the best road wheel in the world, it's also the most expensive.

If it's any consolation, we spared no expense building it. (This is true of every wheel we build, even our very much less expensive range of standard alloy wheels.) As the distributors below will only too readily tell you.

BBS WHEELS & AERODYNAMIC COMPONENTS FOR AUDI, VW, BMW, MERCEDES, PORSCHE AND OTHER FINE MARQUES. AVAILABLE FROM MAGARD (0533) 730831, MOTORTUNE OF BANGOR (0247) 465020, GTI ENGINEERING (0327) 857857, STRATTONS SERVICE (0625) 532678, ASTON MARTIN TICKFORD ENGINEERING (0203) 491010, AUTOSPORT & DESIGN 01-969 8353. UK CONCESSIONAIRES: KITZ GROUP (0908) 677808.

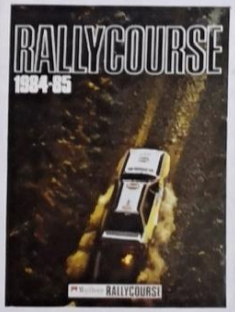
VUDAFIERI - TO REST

Adartico Vudafieri from Italy, has been told by doctors to postpone his come-back to Rallying. He was the victim of an accident in 1979 and suffered injuries to his back.

MITSUBISHI STARION DEBUT AT THE ACROPOLIS

Despite a somewhat disappointing testing programme, the 4-wheel drive Mitsubishi Starion will have its maiden-World Rally Championship round at the Acropolis, early June. It was first seen last year at the 1000 Lakes and at the RAC. According to Japanese journalists, it's more than likely that this car's future will lie in events similar to the Paris-Dakar, in spite of Pajero's recent triumph.

ANNUALS



Rallycourse 84/85.
Hazleton Publishing, in association with Marlboro, have just brought out their high quality annual for the third year running. In the 200-page 84/85 edition, articles have been written by top journalists such as Peter Foubister, Graham Robson, Jeremy Walton, Peter Newton and Mike Greasley. The photographs are the work of ace photographers such as Klein, Bishop and the LAT photographic team.
A definite "must" for all enthusiasts and a bargain at £14.95p.

Automobile Sport 83/85
Tenohart Ltd have just published 195 pages of non-stop motor racing. The articles are by some of the best journalists in the business and are brilliantly illustrated. Automobile Sport includes articles on the Le Mans 24 Hours, Grands Prix, Indianapolis and selected track and rallying events. This annual is an obviously necessary addition to any comprehensive library.

CORSICA - CASH AND CARS

The French round of the World Rally Championship, the Tour de Corse, is doing everything in its power to give the Rally a good name. The organisers have twice as much money for their budget and the route has been improved on. They have also announced that seventeen (!) works teams have been entered.

LANCIA D S4 — RALLY DEBUT AT 1000 LAKES

Cesare Fiorio, the sporting director of the Martini Lancia team, announced at the Monte Carlo that the D S4, which has been designed to replace the Lancia Rally 037, will be *"coming out"* at the 1000 Lakes, to be held in Finland from August 21st-25th, with Markku Alen and Henri Toivonen driving.

1985 "A" DRIVERS

The International Federation has just published a list of priority rally drivers for 1985, established according to their results and records — Aaltonen, Alen, Bettega, Biasion, Blomqvist, Capone, Demuth, Eklund, "Tony" Fassina, Fréquelin, Mehta, Mikkola, Toivonen, Vatanen and Waldegaard. What about the Brits?

NO TOYOTAS AT PORTUGAL

Group B Celica Twin Cam Turbos will not be taking part at the Portuguese round of the World Rally Championship. This decision means that Ove Andersson's team will be making its first appearance of the year at the Safari.

EUROPEANS OFF TO KENYA

The early part of 1985 has had drivers commuting to and fro between Europe and Africa. First, there was the Paris-Dakar and then the preparative work for the Safari Rally for which most top teams went over. Michèle Mouton was working for Audi between Nairobi and Mombassa, whereas Lancia driver, Markku Alen, took part in a national championship round. The Finn was forced to retire when his gearbox blew and victory went to Vic Preston Jr.

SURER — ON TO RALLYING

Marc Surer has decided not to renew his contract with the Arrows BMW F1 team for 1985. The 34-year old Swiss driver informed Jackie Oliver of his decision to quit GP racing at the beginning of February. Surer's future with Arrows has been uncertain for some time now. For the past few weeks it was a question of either him or young Austrian driver, Gerhard Berger. Certain clauses in his contract struck him as being unrealistic compared with those of team mate, Thierry Boutsen from Belgium — who has signed on.
So, Surer the F1 man, will become Surer, the rallyman as from this year. He will be rallying a Peugeot 205 Turbo 16, entered by the Swiss importer and he'll be competing in both national and European rounds. *"Personally,"* he told reporters, *"I'm rather pleased about leaving F1 and trying something else. I feel that I'm going to enjoy driving such a competitive car."*

Surer will also be pairing up with Manfred Winkelhock at the wheel of a Kremer Porsche 956 in Endurance.

RENAULT 5 MAXI TURBO OUT IN MARCH

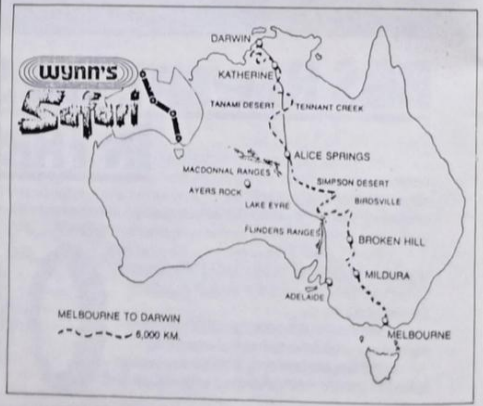
The new Group B R5 Maxi Turbo has been entered for the Criterium de Touraine Rally, the first round of the French national championship to be held from March 12th-14th. Official Renault driver, Jean Ragnotti will be at the wheel.

PEUGEOT UK - A 205 T16?

Peugeot UK could well be entering a 205 Turbo 16 for the young Swede, Michael Sunström. The up and coming driver put in a string of impressive results with his Group A Fiat Ritmo. Sunström will be competing in the Open Championship if all goes according to plan.

TRANS AUSTRALIA

A 4000-mile rally has been planned to take place from August 22nd-30th, from Melbourne to Darwin. *"Wynn's Safari"* will cross through Australia via the Australian Alps, the Simpson and Tanami Deserts.



Swiss Achievement

Conquest VHP is the men's model at right. All other Longines Conquest models, both ladies' and men's are available in a variety of metals and colours, with a conventional quartz movement. All have a sapphire glass and are water-resistant to a depth of 100 feet.

Longines high precision. On the race track, on your wrist.

Longines times to 1/1000th sec., is official timekeeper of all Formula One events, and of the Ferrari and Renault racing teams.

Longines precision mastery is yours in daily life when you wear the Conquest VHP. Expect it to vary by only one minute in five years, for it is five to ten times more accurate than conventional quartz watches.

Its lithium battery has a life expectancy of at least five years.
Longines Conquest VHP is possibly the most advanced wrist watch in the world today.

LONGINES

Pride of the Swiss since 1832

CATCH THE BANDIT !

AS DUSK FELL ON THE CIRCUIT OF SILVERSTONE, I STARED AT THE WHITE-HOT TURBO NESTLED WITHIN THE STEEL TRUMPETS SLOWLY TURNING DARK RED. I STOOD THERE MESMERIZED BY THE DYING GLOW, AND I COULD HEAR THE SCORCHING EXHAUST PIPES SIZZLE AS SMALL DROPS OF RAIN BEGAN TO FALL. THAT WAS ALL THAT WAS LEFT OF THE TERROR-BEARING ROAR OF THE F1 CAR AS IT BLASTED ITS WAY THROUGH THE AIR AT ALMOST 200 MPH ON ITS WAY INTO WOODCOTE...

There's nothing unusual in going to see a new Grand Prix racing car in the rain, especially when it's the month of November in England and especially since Formula 1 cars are now updated to the dawning of the age of the turbo. Take stock of this — 600 bhp developed by a small 4-cylinder engine, whose engine size doesn't even reach the 1500cc figure. At first glance, you might be forgiven for thinking that it belongs to your honest average economy conscious family car. But, as the saying goes, only trust half of what you see, because seen from the inside, it's a different story entirely. The action reveals the epic struggle of man fighting to control those wild horses from bolting off from under the engine cover — a feat made all the more dicey by the slippery track conditions that day...

A TYPICAL BRITISH NOVEMBER DAY

It always seems to be wet and cold in November in England — more so when you're used to living on the continent. Rain had fallen during the night and as dawn broke over Silverstone revealing a fairly clear sky, it was obvious that the track wouldn't dry out completely before the short day was over. We made our way over to the pits where the mechanics were working to the background whirr of a heater burning away inefficiently. And there inside, we caught our first glimpse of the stunning white and green RAM 02.

As the compressed air starter was activated, the Hart 415T engine immediately burst into life. The roar left my skin tingling all over with goose pimples — the body's natural defense mechanism against the cold or to the passion and emotion involved, or the nervous tension vibrating through the air, or simply fear of the unknown? Just one of the complicated human psychological reactions that go with the thrills and dangers of joining in with F1 playmates.

Jonathan Palmer was first out on the track to make sure that everything was in correct working order. Water was spraying up in thick sheets behind the car as it made its way down the straight, despite the huge 'wets' that had been fitted for the occasion, but we could hear the wheels spinning all the same as full turbo power came on and the engine went wild. Not what you might call exactly encouraging! But, the show must go on! There's no possibility of postponing this test drive until the track dries out a little. There's a strict schedule to be adhered to and November days are only so long. I reckon Mick Ralph, the RAM team manager, must have had a lot of faith in my experience — or my lucky star — to have let me try his Hart turbo in those conditions!

F1 THROUGH SHEER HARD WORK

I was given some advice and explications before I climbed into the cockpit from the drivers, Philippe Alliot and Jonathan Palmer, and of course from John MacDonald's men.

It's common knowledge that the RAM is not a top F1 car, but that's what makes the story all the more exciting. John MacDonald is often described as a future Frank Williams. As the story goes, he built his team assisted by Mick Ralph. It took him a decade of hard slog to finally reach the target he had set himself. His very presence in GP racing can only be the work of a miracle, like the Hart engine he uses to power his cars and his dogged belief that it will all be worthwhile one day. RAM employs 28 people on a full time basis for the two single seaters — at McLaren International, the workforce is 80, at Ferrari the figure is even more impressive (about 200 in the Gestione Sportiva). Apart from the Hart power units, the chassis and the bodywork, (which are all manufactured at Rolston Auto Tech, at Bicester), the wheels and other parts which are usually sub-contracted, ie, the radiators (Behr), the fire extinguisher (Lifeline) the safety harness (Sabelt), etc... all the construction, assembly and maintenance work is carried out at RAM. This small Bicester company produces its own 6-speed gearboxes based on a modified Hewland FGB.

The origins of the RAM 02 go back to the March project whose development work first lay in the hands of Adrian Reynard until Dave Kelly took over in 1983. This aeronautic designer whose hobbies included motor racing before he joined the team, got down to work on the 1984 RAM 02. What could be done to this F1 car to get it into the top performance bracket? The most obvious

was the weight problem; the car weighed in at 20 kilos (according to Ralph, more according to others) over the minimum authorised level. There was room for aerodynamic improvement (lack of downforce at high speeds), and, the worst handicap of all, there was no electronic injection on the Hart 415Ts.
Brian Hart has developed a microprocessor management system which hardly worked out dearer, but clearly possessed more advantages all round. Jonathan Palmer is the first to agree. He has already driven the Toleman set up likewise. The British driver also mentioned that apart from higher output, the rev band was also wider and there was more flexibility at low revs, whilst higher up, driving was less jerky and even more progressive as the rev needle climbed near the red. RAM engines are down on paper as developing approximately 600 bhp at 10000 rpm with boost pressure set at 1.8 bars, which the team manager affirms as being the setting used during races. The drivers, however, quote the figure as 2 bars — they are the ones who should know, as they themselves adjust the setting by turning the boost pressure knob which is placed beside them in the cockpit.
If, on the other hand, everyone agrees that the turbo is set at 2.2 or even 2.3 bars for qualifying, then the actual output figures become questionable. There should be more of a difference between the electronic injection and mechanical pump figures, the latter being more tricky to adapt to. Mick Ralph firmly believes that maximum horsepower never goes beyond the 660 bhp mark when boost pressure is increased during qualifying, whereas 850 bhp is said to be reached with the electronic version.
A quick look at the 1984 GP starting grids tend to support this. It appears that surviving in the GP jungle is more of a matter of passion, both for people like the ingenious Brian Hart (whose 4-cylinder engines have shone on several occasions in the Tolemans) and for RAM Automotive.

ALUMINIUM CARBON SHELL AND PULLROD SUSPENSION

The fashion at Bicester is to equip cars with 2-piece chassis which are glued and riveted together. The upper part is made out of composite carbon fibre, which also adds to the rigidity of the lower aluminium portion constructed with honeycomb panels and machined cross bars. The cockpit section was lengthened to accommodate the fuel tank to the rear. The suspension system is made up of classical wishbones with a slim oblique pullrod to operate the *"inboard"* spring/damper units for each wheel.
Since F1 rules now stipulate that flat bottoms are the order of the day, (the RAM shows no signs of any attempt being made to retrieve some of the ground effect), the front and rear wings

have become huge, especially with the lateral appendages that have been added here and there to the rear portion. The car looks like a bulky reminder of the *"wing car"* era. Climbing into the cockpit entails removing the quick-release steering wheel and stepping over the large side pods. Their function is to channel the internal cool air flow and also offer a little protection to the driver. The big aluminium Behr radiators can be seen under the fairing and are angled a little like a plane taking off (turbo outlet supercharging air intercooler to left, water radiator with water/oil intercooler on right). The air flows over certain accessories which need cooling like the British Holset turbo and the left wastegate, or the extra oil radiator and housing before exiting under the winglet. The housing is also fitted with two Naca air inlets designed to improve cooling further on the right side. Enclosed within is the ignition plate, with its two coils and electric components, two dry video camera-type batteries, the combined mechanical/electronic fuel pump driven by the engine, as well as other accessories like the oil and fuel pressure alarm contact points.
An interesting detail is the valve situated in the right side pod which under pressure, and in the wink of an eye, permits a rapid change of water in the cooling circuit. It could turn out to be extremely useful in an emergency, if the car overheats during a GP.
The Hart 415T engine is original in other aspects apart from its small size and light weight — 130 kilos with accessories. The block and cylinder head are cast in a single piece which does away with the gasket problems that arise with a turbo engine of such high specific output (thermic and mechanical stress). Brian Hart decided to get round the problem by using an unusual double ignition device. He added a row of spark plugs on the right side of the engine (inlet side), in addition to the others placed between the two overhead camshafts protruding into the middle of the combustion chamber, between the four valves of each cylinder.

CONCERTO ALLEGRO FOR 6 GEARS

"Very little grip," Jonathan Palmer muttered in a bored tone as though he were leaving his place in the cockpit to his usual team mate rather than a beginner. Well, it looked as though I was going in for the high dive without the safety net, which meant that I was going to get a real taste of what F1 drivers really go through. As I slid my way into the cockpit, I had time to notice the narrowness of the black-sided carbon fuselage and the aluminium plate which helps you point your legs in the right direction towards the footwell and protects them from the *"inboard"* spring/damper unit whose slim lower arms are articulated in the middle of the floor board. I had to twist around a little to get my feet under the steering rack before I finally found an acceptable, if uncomfortable sitting position. As the mechanics were strapping me down in the Sabelt harness, I realised that driving in Palmer's specially moulded seat wasn't going to make my job any easier. I knew that I was going to have trouble in applying opposite lock and in shifting the gear lever accurately. I didn't think it was the right time to start looking a gift horse in the mouth and decided that here I was, lucky enough to be sitting in a F1 race car, and I was going to enjoy it, whatever the difficulties!
I waved to the mechanic behind me who had volunteered to get the car off. The deafening roar and vibrations quickly had me forgetting it was cold. The right-hand gear lever has a double *"H"* 6-speed grid. Although reverse is compulsory in F1, it had been suppressed. Without it and no starter, a simple spin in a GP, and you're out until the following round! I shifted into first. I heard all the usual metal scraping metal sounds. I was feeling tense as I was about to put my foot down on the clutch pedal — I musn't stall or make a mess of it with all those people standing around watching me. I was agreeably surprised by the willingness to obey of the Hart engine in contrast to the legitimate harshness of the race car's mechanicals. Driving out of pit lane wasn't as much of a Mission Impossible feat as I had thought it was going to be.
I concentrated on my driving as though I were sitting on a bomb about to explode if I made the wrong move. In fact, the comparison was more realistic than I cared to admit at the time, and I was only jabbing at the throttle pedal lightly... It took a couple of laps to work out what all the dials and figures were for. 65 — that was for the water temperature — still a bit cold. 1.7 as I accelerated — that was obviously the boost pressure which Palmer had ommitted to turn down (!) 6000 — 8000 — 9500... careful, that's the Smith rev needle wavering around a little too wildly for me. If it goes any higher, there will be an expensive piston, rod and valve soup on the menu tonight... I also had to put all my concentration into shifting the lever into the right part of the grid — and not too far over. The gear ratios had been chosen so that Silverstone could be lapped fast, using just the top four gears, which meant that I only had to move the lever to form an "H". Dropping down into 2nd or 1st could be felt as a harder spring had been fitted.
Silverstone is a very fast circuit. If you take Copse or Becketts in 3rd, you can still step down harder onto the throttle to get the feel of the rear sliding and to apply opposite lock. In view of the wet track, it would be sheer madness doing the same at Stowe or Club in 4th. You mustn't hesitate in using the turbo engine to tone down the car's tendency to understeer as it goes into the sharper bends. As long as the turbine keeps turning as you go in, there's no throttle lag at all. The power climbs up fast, but smoothly. The 4-cylinder Hart engine is

DATA SHEET

RAM 02-HART F1

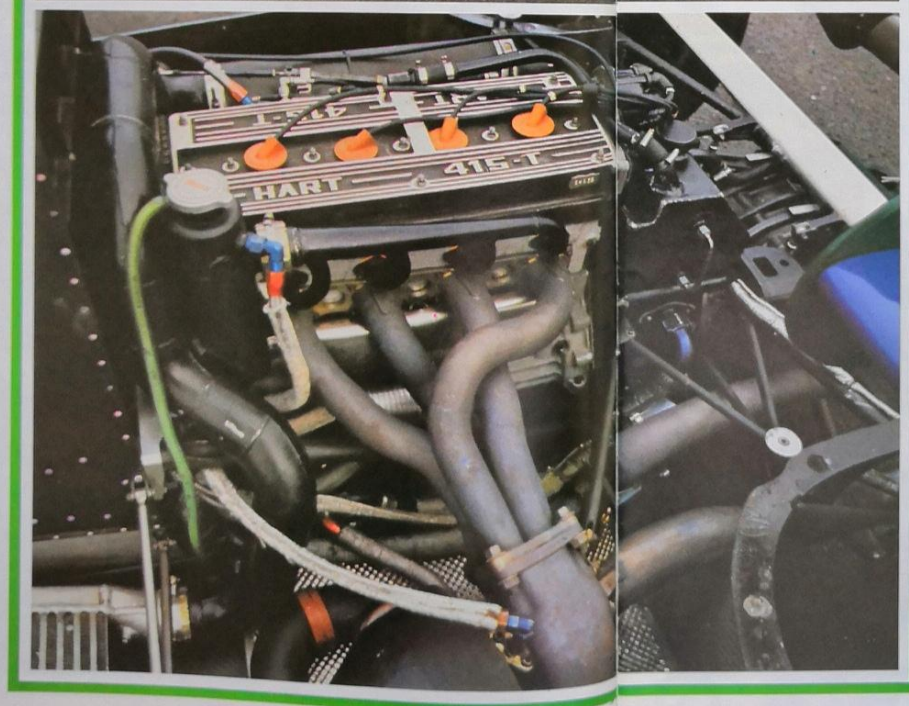
ENGINE

Construction
Location : Central, rear.
Configuration : Longditudinal with vertical cylinders.
Type : Hart 415 T, 4 cylinders in-line, turbocharged.
Cooling system : Water circuit, lateral radiator.
Construction materials :
Block and cylinder head : Cast aluminium.
Cam carriers : Cast magnesium.
Pistons : Mahle, forged aluminium alloy.
Connecting rods : Cast steel.
Casings, covers and struts : Magnesium alloy and aluminium.
Crankshaft bearings : 5.
Combustion chambers : Hemispheric, "cross flow" type.
Distribution : Belt-driven double overhead camshaft. 4 valves per cylinder operated by double coaxial steel springs.
Fuel system : Lucas indirect injection mechanical pump system, single Holset turbocharger with wastegate, aluminium Behr air/air intercooler, Fuel flow reaches cylinders through injectors located outside the right hand side trumpets. Injection distributor located on right side of engine, driven by toothed belt behind the inlet cams. Combined mechanical/electric fuel pump with incorporated alternator.
Exhaust : Individual steel trumpets per cylinder joining together at turbo-charger inlet. Evacuation to the rear between the left suspension wishbones with separate pipe from wastegate.
Ignition : Magnetti Marelli electronic system. 2 spark plugs per cylinder (one placed vertically in the centre of the combustion chamber and the other transversely on the right). Distributor on inlet camshaft end.
Dry battery 12/16 Amp.
Lubrification : Dry sump with lateral radiator.

Specifications
Construction No : 415T/84932
Engine size : 1496cc
Equivalent engine size (Coefficient 2 for supercharged F1s) : 2992cc.
Bore and stroke : 88.0 x 61.5mm.
Swept volume per cylinder : 374cc.
Compression ratio : 7:1.
Angle between valves : 40°.
Boost pressure : 1.8 bars (2.2 bars for qualifying).
Maximum horsepower : 600 bhp (441 kW) at 10000 rpm.
Torque : Approx. 41.5 mKilos (407 N.m) at 7500 rpm.
Maximum revs : Race - 10000 rpm. Qualifying : 10200 rpm.
Resistance limit : Approx. 11000 rpm.
Specific power : 400 bhp/l (295 kW/l).
Linear piston speed at maximum rev line : 20.5m/sec at 10000 rpm.
Weight : Approx. 130 kilos/286 lbs (complete with clutch and accessories).

CHASSIS

Type : 2-piece monocoque, glued and riveted. Honeycomb panels on lower part and composite carbon fibre for upper part. 5 machined and anodised aluminium cross members.
Fuel tank incorporated in monocoque cockpit, behind the driver. Roll over bar.
Engine enclosed by 2 tubular steel support frames up to the magnesium alloy engine/transmission spacer.



Bodywork : Composite kevlar and reinforced with carbon fibre (25 %). Flat bottom and lateral side pods. 3-piece fuselage with quick fastening devices : front nose cone, cockpit surrounds and rear fairing. 2 front adjustable leading edge flaps. Large rear wing with 2 adjustable fins and lateral appendages.
Suspension : Independent by wishbones and inboard spring/shock absorber unit operated by oblique pullrod connected to top of upper wishbone. Anti-roll bar to front and rear, non-adjustable. Wide base lower wishbones. Steering tierod to the front and toe-in to the rear, level with the upper wishbone. Cast magnesium stub axles. Steel coil springs. Hydraulic Koni telescopic dampers, aluminium alloy body. Streamlined wishbones, special pullrods, welded steel tube pullrods and tierods.
Steering : Jack Knight rack and pinion. 2.25 turning circles, lock to lock.
Brakes : 4 radially ventilated steel AP discs with double calipers and single piston placed in the wheels. Dynamic air captor scoops on all four wheels. Hydraulically operated with two separate front and rear ducts. Driver adjustable brake balance knob.

DIMENSIONS

Wheelbase : 2,769mm
Front track : 1,765mm
Rear track : 1,607mm
Overall length : 4,064mm
Length : 2,045mm
Height : 889mm

DISTRIBUTION OF MASSES

Fuel tank : Central (part of shell).
Intercooler in supercharging system (aluminium Behr) and extra oil radiator : In right side pod.
Engine oil tank : Integrated into the engine/transmission spacer.
Fuel pumps : Electronic ignition housing, dry battery (2 12 V/16 Amp units) : to right of engine opposite the turbo wastegate system on left side.
Transmission oil radiator : Under the gearbox.
Extinguisher : 5-kilo bottle under the seat and 12.5-kilo bottle under driver's knees + 1 medical air bottle behind the front left rocker.

TRANSMISSION

Type : To rear wheels.
Gearbox : 6-speed Hewland FGB unit modified by RAM. No reverse. Magnesium alloy casing. Mechanical pump lubrification system with cooling radiator under the gearbox.
Differential : Hewland self-locking (approx. 80 % efficiency)
Clutch : Hydraulic Borg and Beck clutch, twin dry discs.
Gear ratios (on Silverstone GP circuit) :

	No of teeth	Speed at 10000 rpm (kph/mph)
1st :	13/35	124/77.5
2nd :	15/33	151/94.3
3rd :	16/30	185/115.6
4th :	19/29	219/136.8
5th :	25/33	253/158.1
6th :	22/25	293/183.1

Final drive ratio : 8/31

DATA SHEET

CAPACITIES

Fuel tank : 220 litres
Engine oil : 10 litres
Water : 9 litres
Wheels : Gotti and Speedline light alloy rims (magnesium rims and duralumin centre, assembled with three safety bolts. Held in place with one screw with safety pin.
Dimensions : Front - 11 x 13. Rear - 16 x 13.
Tyres : Pirelli P7 Corsa radials. Tyre pressure : Approx. 1 bar.
Dimensions : Front - 255/620 - 13. Rear - 410/655 - 13.
Total weight (empty fuel tank) : 560 kilos/1,232 lbs (minimum weight allowance: (540 kilos).
Front/rear weight distribution : Approx. 30-70 %.
Power to weight ratio : 0.93 kilos/bhp (1.27 kilos/kW).

ACCESSORIES AND SAFETY EQUIPMENT

Dashboard instruments : Mechanical Smith rev counter, 12000 rpm, with mechanical speed check, VDO water temperature guage, MotoMeter boost pressure guage, digital inlet air temperature guage (before and after intercooler).
Warning lights : Oil pressure (amber), water temperature (green) and fuel pressure (red).
Dashboard switches : Ignition contact, auxiliary electric fuel pump, rear red light, fire extinguisher.
To driver's left : 2 adjustable knobs (boost pressure and brake balance).
To driver's right : Gear shift lever.
Removable Personal steering wheel.
6-point Sabelt safety harness.
Lifeline extinguisher and "Life-support" system.
Air starter motor system.

PERFORMANCES FIGURES

Maximum speed : Over 300 kph/190 mph according to aerodynamic settings.
Accelerations (on cold damp track surface) :
0-60 kph : 2.2 sec.
0-80 kph : 3.0 sec.
0-100 kph : 4.1 sec.
0-120 kph : 5.0 sec.
0-140 kph : 6.3 sec.
0-160 kph : 7.2 sec.
0-180 kph : 8.7 sec.
0-200 kph : 10.1 sec.

CONSTRUCTOR

RAM Automotive Ltd,
Unit 5c,
Telford Road,
Bicester,
Oxon OX6 79W.
Tel. : (08692) 246244
Managing Director : John MacDonald.
Team and Factory Manager : Mick Ralph.
Sponsors : Skoal Bandit (Smokeless tobacco), Newsweek (magazine), Rizla (cigarette paper).
Industrial backers : Champion, Koni, Magnetti, Marelli, Pirelli.
Alliot's personal contracts : Comtesse du Barry (gastronomy, foie gras), Stop Hemo (first aid plasters) Addit (temporary employment agency).

quite easy to drive even at 6000 rpm. Alliot and Palmer — who only judge their performances by the stop watch, are quick to add that with 2000 more revs, the engine would be really efficient. The rev redline is probably more important as boost pressure is increased. But I didn't feel this was a particularly good opportunity to check that out!

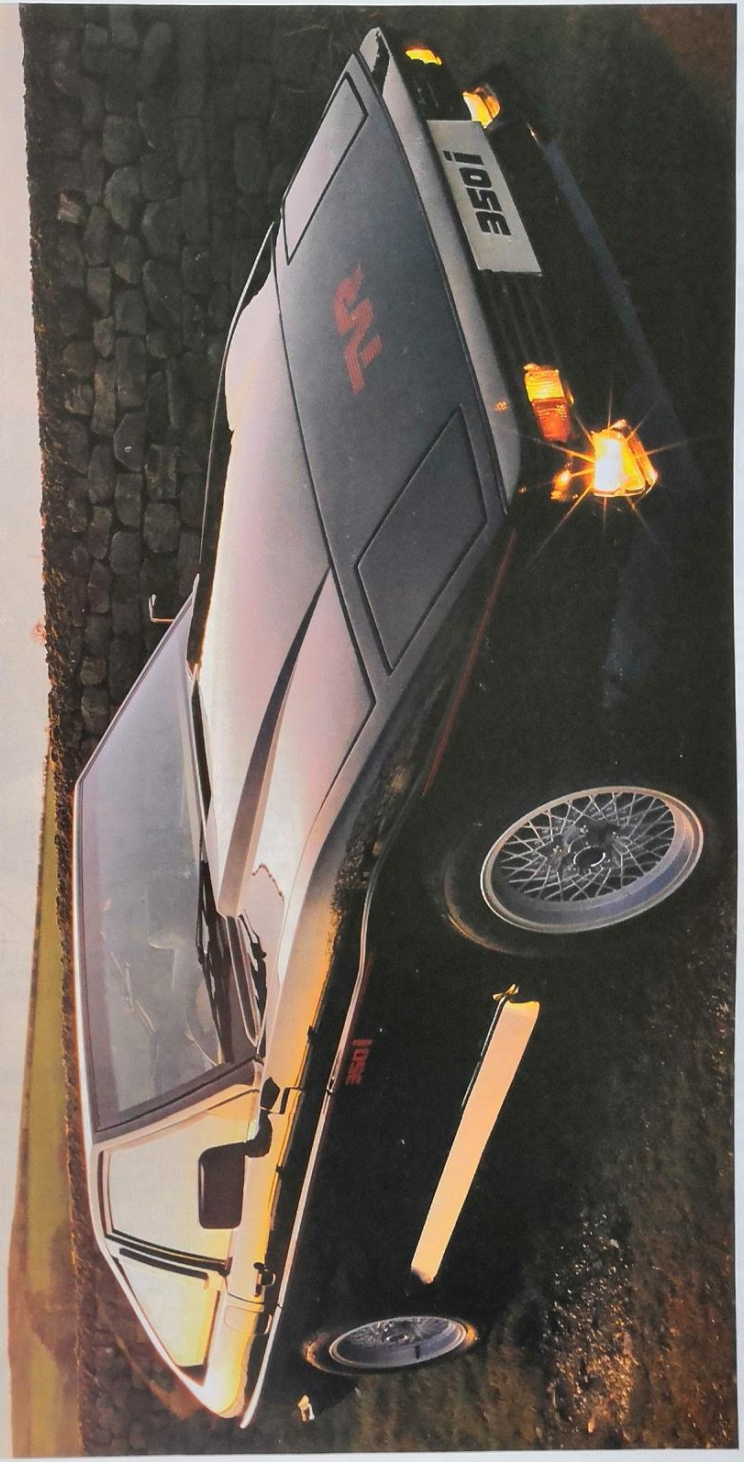
ACCELERATION TIMES

The only other time I drove a F1 car was during the ground effect era, so it was difficult to draw comparisons on the wet Silverstone track that bismal November day. However, I didn't feel that the RAM was particularly brilliant. I must admit I was being even more cautious in view of the fact that I didn't have enough elbow room to apply opposite lock or change gears without difficulty. I tried to drive as smoothly as I knew how. I realised, as I turned the wheel with just the tips of my fingers that this was not the same sort of F1 car I had tried before. Ground effect cars had the driver literally fighting his way round the track in an exhausting battle. As I lapped my way round Silverstone, I realised that the RAM lost none of the light, precise sensation which was continually being transmitted through the steering wheel. This is perhaps a result of the lack of aerodynamic downforce that the car is critcised for. And what about the sudden rear skid which caught me off my guard once or twice, as I came out of Stowe, a particularly slippery part of the track on wet days. The car seemed to be well placed on the line in. I shudder even now to think of what it felt like, the radial Pirellis suddenly losing all their grip as the engine power put the wheels into a spin. I thank my lucky stars that I was being extra-careful, but it's frightening to feel just how quickly and unexpectedly you can lose control of a F1. Mick Ralph let me put in 10 laps on the 4.7 km/2.9 mile circuit, a generous gesture, when you consider the money involved with a F1 car and the life span of its engines which usually last 350 — 400 miles between costly rebuilds. A mechanic held out a board with my previous lap time on it, each time I drove past the pits. I could see — and feel — that I was gradually improving. I was pressing down the accelerator earlier and harder as I exited out of the turns and I could feel the wheels spin in response to the turbo. After a while, I was able to let up on the hard concentrating and enjoy other sensations like the roar of the wind and the engine and the unbelievable speed at which I was tearing down under the Daily Express bridge and then guessing at where I could have left the braking to had the circuit been dry. All too soon, it was time to go back to the pits. It was over. The car and I were both safe and sound. I was more than relieved that I'd brought the car back in one piece.

With the help of my colleague, Michael Bernard of Sport Auto in Germany, we timed the accelerations of the RAM-Hart with Philippe Alliot at the wheel. Something went wrong with the first attempt and we only managed one test so as to spare the clutch which takes a severe beating at the start of a GP. Bearing in mind that the track was very cold and damp and the car fitted with wets, it took Alliot just 4.1 sec to speed up from 0 — 100 kph and he reached 200 kph in 10.1 sec. Quite impressive until you realise that a good F2 car puts in roughly the same times. During a testing session last year on a dry track, the Arrows A7-BMW was timed with Michael Bernard's material again. Using lower gear ratios (for Hockenheim), the Arrows sped up from 0-200 kph in 6.4 sec! Even if you allow the RAM 0.5 sec for the track conditions, it's still a long way off. Two hypothesis are possible. Either the times would have improved with time and practice. Or, the RAM-Hart (boost pressure set at 1.7 bars) doesn't accelerate as fast as the other F1 cars. Whatever the verdict, the fact remains that during 1984, the RAM was never a forerunner.

For 1985, RAM Automotive will be entering a new car with a restructured team. The drivers will be Philippe Alliot and Manfred Winkelhock, working with the talented engineer, Gustav Brunner. Skoal Bandit will continue backing RAM, and the electronic injection Hart engines seem to be as good as the best of them. An interesting season is in store. Cheers, and thanks, MacDonald and Co! ■

So scarce it makes Ferraris look like Cortinas.



In an age when cars are turned out by robots in a matter of hours, the new TVR 350i Fixed Head is a glorious exception.

Instead of racing off the production line, it's made at a small's pace, almost entirely by hand.

The whole painstaking process takes all of four hundred hours, fully half of which time is spent honing the body to a glass like perfection.

But undoubtedly, the real beauty of this car lies more than skin deep.

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From a standing start, it can rocket to 60 mph in a breath over six seconds.

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TVR Engineering Ltd., Bristol Avenue, Blackpool, FY2 0JF. Tel. (0253) 50531. Telex: 67758.

FERRARI - AT LAST!

ALBORETO AND ARNOUX BOTH SMASHED THE FIORANO LAP RECORD AT THE WHEEL OF THE GREATLY MODIFIED 126 C4 LAST DECEMBER. A RAY OF HOPE NOW SHINES UPON THE MEN AT FERRARI WHO HAD ALL BUT LOST HEART. HAVE THEY FOUND THE ULTIMATE WEAPON?

The greatest metamorphosis concerns the engine, a change which consequently changes the aerodynamics; within the Vee of the 6-cylinder engine, the exhausts have been replaced by the inlets, and the laterally-placed inlets have been replaced by the exhausts! This change-over was engineered for several reasons. Firstly, to rationalise the compressed air and fuel circuits, enabling the mechanics to gain easy access to the fuel lines, which was far from being the case before. Secondly, this change-over has the effect of lowering the centre of gravity which up to that point had been handicapped by the heavy supercharging system, placed just above the engine. Thirdly, following current trends in F1, an exhaust valve could be fitted to check the incoming turbine compressed air flow. Fourthly, shorter exhausts have been fitted, exiting through the extractor and the new integral engine cover has also been lowered. As a result of all these modifications, the V6 from Maranello will no longer be the odd man out amongst the other F1 single seaters, but it should have gained in both reliability and efficiency.

The redesigning of the engine has naturally resulted in more McLaren-like streamlining than before! Larger side pods, a separate wheel and gearbox housing unit and uniform engine cover are now featured on the 126 C4. Even if some say that Ferrari are copying, they won't take it to heart, after all, who hasn't copied Ferrari in the past?

Ferrari himself is pleased to see that the minimum weight allowance figure of 540 kilos has been reached through working on the existing base. In this way, particular care was taken to detail and every part was attentively designed so that last year's version, which rarely weighed in at less than 580 kilos during the second half of the season, will be a thing of the past.

The Commendatore's men have got themselves firmly on the right track, it doesn't stop there. Soon it will be time to start thinking about designing a four-cylinder engine.

Ferrari have rarely had such a disappointing F1 season, especially in light of all the hope that was placed in the C4 which Forghieri and his men had carefully put together. The Commendatore held its creator responsible and has not been able to forgive him despite a victory at the Belgian GP, together with the pole position and lap record. That was perhaps a case of Zolder being the ideal circuit for a particularly high-revving engine, or perhaps it was a case of pot-luck for the mechanics who'd got the settings just right that weekend. There's no other explanation as to why the C4 should have won that GP and no others.

The Commendatore wasted no time in taking radical steps. He began by completely reorganising the internal structure of his team. New faces appeared and familiar ones disappeared. Responsibility was shared out differently. The men in the Ferrari drawing room were given strict instructions to rethink the C4 entirely and get the Scuderia back onto the path to victory.

Postlethwaite (chassis) and Renzetti (engine), the Ferrari engineers, have gone against all logic by not adopting the policy of starting out from a blank sheet of paper. They have decided to tackle the problem by carefully analysing each of the (many!) modifications that were made during the 1984 season. By the closing round at Estoril, the 126 C4 beared little similarity to the original 1984 design. Many of the changes engineered by Forghieri were in fact well-grounded.

Even before the 1984 season had closed, work at Ferrari began to avoid a repeat performance of the catastrophic start to last season when the construction of the new model was completed with only a month to go to the opening round. No tests had been carried out either. Several weeks of labour were saved by working on the existing C4 base. Every part, whether it performed its duty well or not, was looked at, and, as a result, there will be time for a testing programme this year.

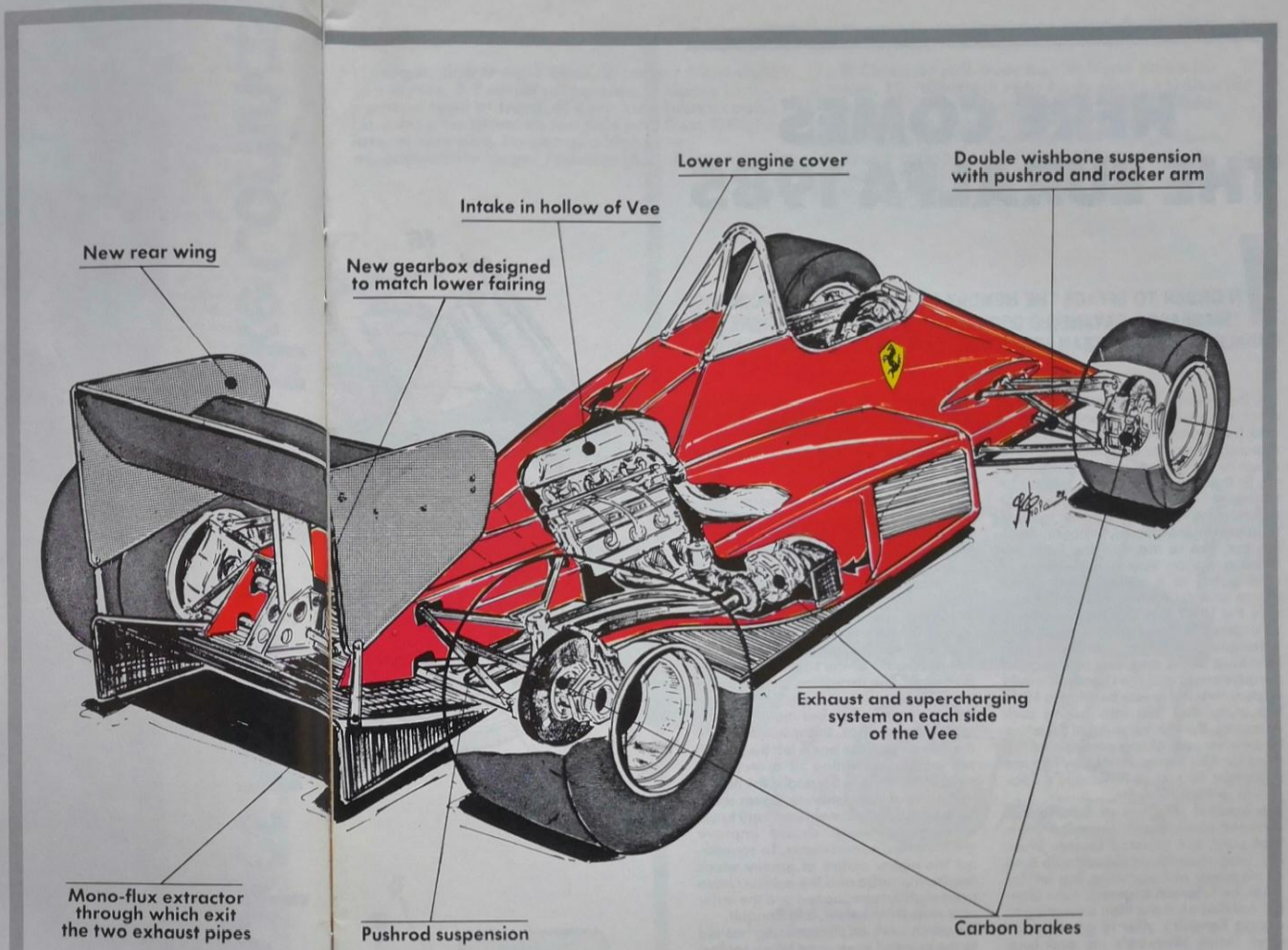
Before we go on to the 1985 model, let's first take a look at the changes that were made during 1984. The first modified C4 was sighted at the French GP and was only used during practice. The difference on the *"Dijon"* version concerned the front side pod fairing, the rear winglet deflectors and a large monoblock extractor was also fitted.

The *"Hockenheim"* version seen at the German GP featured rear pushrod and rocker suspension, instead of the former pullrod type. The side pods were longer (previously seen at Brands), with an upper hot air outlet and a double flux extractor running under the suspension unit. Unfortunately, the rear track was found to be too narrow during testing and the aerodynamics of the fairing were affected. The *"Monza M2"* saw the light of day at the Italian GP. The radiators and intercoolers had been swopped over so that McLaren-like bodywork could be fitted at the rear. The idea of a monoblock extractor was restored with an integral fairing to cover the gearbox and the lower shock absorber mountings.

The Fiorano track record was broken by the very latest version. The front *"moustaches"* are in line rather than forming a V-shape, the wing has lost its side extensions and the lower section of the gearbox has been redesigned in order that the upper mountings of the shock absorbers can be placed higher and that the streamlining of the monoblock extractor is improved upon. A great achievement in itself! The other surprising change concerns the two exhaust outlets which are traditionally placed in the Vee of the engine, just in front of the rear wing. They have now been lengthened and run down alongside the engine to finally exit under the extractor in McLaren-like fashion. This version was first seen in May, but has since been further modified. The water and oil radiators are placed in an upright fan-like position, to face the in-coming air flow, à la Toleman. Consequently, the hot air exits laterally. A second flux inside the side pods feeds the intercoolers placed just behind the radiators.

A healthy basis for development was thus conceived in five different stages, and from this basis, we get an idea of what the 1985 version will be like. The 126 C5 will continue to feature the double-welded shell, the fuel tank will be lowered by about 4 inches and the carbon fibre SEP brakes will be mated up with specially-designed Brembo calipers.

The front features pushrod-type suspension and to the rear, the identical pushrod set-up tested in Germany has been fitted. A new transversal gearbox will be used with a higher casing and the radiators placed in a fan-shape... ■


New rear wing
Intake in hollow of Vee
Lower engine cover
Double wishbone suspension with pushrod and rocker arm
New gearbox designed to match lower fairing
Exhaust and supercharging system on each side of the Vee
Mono-flux extractor through which exit the two exhaust pipes
Pushrod suspension
Carbon brakes

The new team organisation

Executive Manager
Piero Lardi-Ferrari

Public Relations
Franco Gozzi

Administration
Ezmanno Della Casa

Chassis and Bodywork
Harvey Postlethwaite

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Engine and Gearboxes
Ilio Renzetti
Luciano Caruso

Technical Director on the track
Antonio Tomaini

HERE COMES THE EURALFA 1985

IN ORDER TO EFFACE THE MEMORY OF A RATHER DISAPPOINTING 1984 SEASON, PAVANELLO DECIDED TO COMPLETELY RE-THINK THE EURALFA FORMULA 1 TEAM FOR 1985. GPI EXPLAINS THE MAIN CHANGES.

The Euroracing-Alfa team had a somewhat disappointing season last year and the blame has been shifted from one department to another. Some put it down to the engine, others to the chassis, or the turbo, or even the logistics of the team — no-one was willing to admit to being the responsible party. Indeed, frequent engine failures, turbos not holding out, not to mention the fuel tank running dry on several occasions, all contributed to a rather disorganised set-up impression to those on the outside. For 1985, Pavanello has established a radical technical programme which is designed not only to improve the performance of his engines, but also the aerodynamics and the chassis. It would appear that the severe beating in 1984 has stimulated him into taking such measures, but the resigning of Benetton for another year of sponsorship and the need for Alfa Romeo to stick by him are important factors in Pavanello's decision to re-think his team.

The internal structure of Euralfa has changed considerably since last year. Well-paid, but talented Gustav Brunner, who often found himself with time on his hands at Euroracing, has left for RAM. Ex-Toleman engineer, John Gentry, needed no more than a morning to accept Renault's offer to go and look after Derek Warwick's car and Luigi Marmiroli, the ginger-moustached consultant who worked for Alfa Romeo, has taken charge of Lamborghini's Advanced Techniques research department. So it is Colombo who inherits the position of engineer in the Italian team and he will be able to count on Tolentino, who joins the Italian team as track engineer, proof that Euralfa want to be sure they have the arms for success in 1985.

Work began on the chassis which, in fact, will be little modified from last year's. The main differences are that the monocoque shell will be made in Italy and no longer in England and the carbon and Kevlar layers will be arranged differently in the belief that the chassis will be thus strengthened. Design and crash testing were undertaken by Alfa Romeo's research department.

If the chassis is left relatively untouched, the front and rear suspensions bear no resemblance to last year's set-up. The former double wishbone with pushrod and mini-rocker design has made way for a lighter double wishbone and pull-rod assembly at the front. To the rear the changes are even more apparent where the double wishbone with pull-rod system has been replaced by a double wishbone with pushrod and mini-rocker. Make no mistake. It's not a case of simply transferring the front assembly to the rear and vice versa. The rear unit has been completely redesigned.

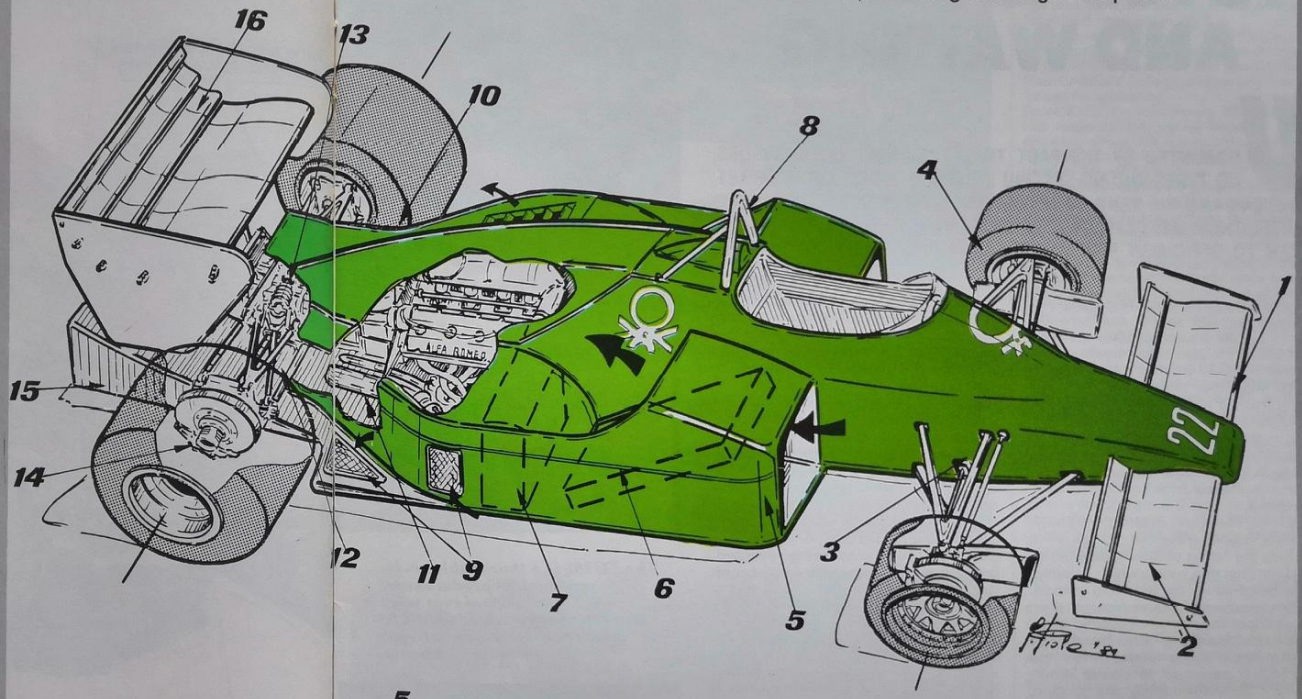
The most important elements of the new design are that the spring/damper combinations are anchored horizontally above the gearbox and the wishbones and pushrod mounts are much higher up, practically at the same level as the half-shaft. The reasoning behind these modifications is that, firstly, by transferring the shock absorber mounts to the top of the gearbox, the space between the wheels and the box is left free which will enable the fitting of a McLaren-inspired bodywork. Secondly, the higher mounting of the wishbone leaves room for a particularly curved and very large air-extractor which should improve ground effect considerably. To counteract the higher centre of gravity which results, the turbo and the exhaust have been slightly repositioned and the latter now exits from below, à la Renault.

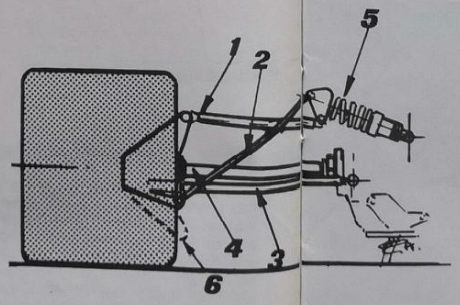
Research work on streamlining has led to the pointed nose-cone being replaced by a larger flat one. The side pods have been lengthened for purely mechanical reasons and are 100mm higher than before so that more efficient intercoolers and radiators can be fitted. The wheelbase has also been lengthened by 80mm.

Pavanello's programme included work on the fabulous V8 engine which now bears little resemblance to the original, even the block has been modified. The engine now features redesigned combustion chambers (higher compression ratio) and the internal lubrification circuit, the turbos and the injection system have all been closely looked at. After much deliberation, the Italian Avio turbos have finally been replaced *"officially"* by the German KKKs. In view of the thirst of the V8, it was imperative that a 100 % electronic injection system be fitted. For Euralfa, this is a touchy question. At present their electronic material is being supplied by the small group, Nord Elettronica and the mechanical elements by Spica. However, this is a makeshift set-up while they wait for the Marelli-Weber injection which is used by Ferrari. *"You'll be able to use it when we are fully satisfied with it,"* say Ferrari. *"We'll supply you when Ferrari give us the go-ahead,"* say Marelli. On the test bench Tonto has also tried out the V8 fitted with the system used by Lancia in Endurance racing but the requirements of the two disciplines proved to be incompatible. Whatever the system finally chosen, Euralfa have got to solve the consumption problem of their V8 if they don't want to go through a repeat performance of last year's show.

The development of a 4-cylinder engine is well under way and drawing board designs will soon be materialised in the workshops. It is hoped that the real thing will first see the light of day in July and the official debut is planned for the Italian GP. Until then, Alfa will be kept very busy producing fifteen 1985 V8 engines to supply the requirements of both Euroracing and Osella, with the fifteen 1984 V8s going at last to Minardi who blew the two they were lent by Alfa. The V6 Chiti is still not ready. For all parties this arrangement seems quite suitable. Minardi really only require six engines and they have agreed to pay £50,000 a piece. These will be maintained incognito by Osella. ■

1) Larger, flatter nose-cone. 2) Larger front wing end plates. 3) Pullrod suspension replaces former pushrod type at front. 4) Very long brake cooler air-inlet also channels the side pod flux. 5) Right lateral side pod, longer and higher to accommodate larger radiator (6) and intercooler (7). 8) Classical roll-over bar. 9) Right turbo air intakes. 10) 'Waisted' rear bodywork. 11) Shorter exhausts exiting through flat bottom. 12) Rear pushrod suspension with spring/damper combination (13) positioned over the gearbox. 14) Brake caliper. 15) Wide and very arched extractor thanks to high-positioned suspension. 16) Rear wing with larger end plates.





This diagram shows our idea of the new rear suspension assembly of the Euralfa 1985. 1) Upper wishbone. 2) Pushrod. 3) Lower wishbone with very high mounting point. 4) Half-shaft. 5) Spring/damper combination positioned horizontally over the gearbox. 6) Outline of the former hub.

THE TOLEMAN TG185 IS READY AND WAITING

UNDAUNTED BY THE FACT THAT THEY HAVE NO SPONSORS, NO TYRES AND NO SECOND DRIVER TO BOAST OF AS OF YET, TOLEMAN AND HIS BAND OF MERRY MEN HAVE SUCCESSFULLY COMPLETED THEIR 1985 DEVELOPMENT PROGRAMME. THEIRS WAS THE FIRST TEAM TO OFFICIALLY REVEAL THEIR LATEST OFFSPRING, THE TG185.

How did they manage it so quickly? The answer is quite simple really — the TG185 is not an entirely new creation, but more an improved version of last season's TG184. Very nearly all the parts have been revised —but only the front track and the clutch pedal fit on both cars! The TG185 has evolved to fit the most recent technical rules and regulations. It appears to be very similar to its predecessor except that every part, no matter how small, has been reviewed.

The main change concerns the aerodynamics, following the rule change which forbids the fitting of lateral side-plates and tandem ring wings, which Toleman had been using up until last season. *"The aerodynamics have become even more important now since ground effect has been abolished,"* Alex Hawkridge explained. *"Every element on the TG185 is designed to create downforce."* Notwithstanding the original rear wing composed of three separate fins! There are two wings placed one on top of the other, similar to the Lotus race cars two years ago, and the third one is mounted very low, under the gearbox. *"We find this set-up very satisfactory,"* Hawkridge continued. *"I doubt very much that you'll find a similar system on any of the other cars."*

A full engine cover is also featured now. Particular attention has been given to the rear wheel housing bodywork, which takes on what has become the familiar McLaren-like shape, designed to improve channelling of the turbulence created by the huge wheels.

Few modifications have been made to the Hart engine — the water pump has been switched over from one side to the other, to reduce the length of the cooling system. The ignition and injection systems are 100% electronic and a system of optical fibres has been mentioned. There is a long temperature intercooler placed in a fan-like position in the left side pod. Front suspension is of the pull-rod type and to the rear, there are pushrods.

Toleman's great innovation of the close-season has been the creation of his own gearbox. The casings and pinions are all home-made. A mock gearbox had been fitted to the TG185 at the presentation, but was that the only reason why Rory Byrne refused to oblige when we asked him to take off the engine cover? It's a shame that, in spite of all the hard work and effort, Toleman are still without a sponsor and tyres. A set of Michelins had been donned for the occasion and only two words adorned the blue and white paintwork — Toleman and *"Virgin"* the record company, at whose club the TG185 was being revealed. Being sponsorless is a particularly uncomfortable position to be in with just a couple of months to go before the F1 circus gets back on the road, but to solve the tyre problem, perhaps a driver like Ghinzani (closely linked with Pirelli) might rescue Toleman, not forgetting that Hesnault's backers might be able to influence Goodyear into providing their rubber. *"Now it's a case of waiting to see which tyres our cars will be running on, before we can name the second driver,"* Hawkridge pointed out. Until then, the team will be getting on with its intensive testing programme in England — weather permitting — and then it will be on to the FOCA tests in Brazil.

A spokesman for the team had this comment to make — *"The TG185 is the most sophisticated and most attractive of all the single seaters that have come out of Toleman Motorsport. We are extremely optimistic."*

We, and Toleman, are convinced by the progress that has been made. It's worth pointing out that the shell is entirely home-made and the aerodynamic studies have all been carried out on a 1/4 scale model at the wind tunnel near the workshops. The development schedule of the TG185, which began in September 1984, is bang on target which emphasises Toleman's *"dauntless spirit of resolution"*. If a prize could be given to the most enterprising or oncoming team...

The TG185 is a thoroughly revised version of its predecessor, featuring an original rear wing and rear bodywork designed to cut turbulence caused by the rear wheels.

The men in charge

No less than sixty two people work for Ted Toleman and manager, Alex Hawkridge. John Gentry's leaving for Euroracing and then Renault, has resulted in the shuffling around of the technical team.

Rory Byrne (born January 10th, 1944) is the chief engineer. He is of Irish extract, but was born and bred in South Africa. He joined Toleman in 1978.

Pat Symonds (born June 11th, 1953) joined Toleman in 1981 and is now in charge of the R&D department. He graduated from Cranfield College and aerodynamics are his speciality.

Dave Kelly (born February 27th, 1951) has replaced Gentry as head of the drawing office. He is a qualified engineer and worked on the British Harrier vertical lift-off bomber as well as the Airbus A300/ A310. He joined March in 1982 where his main task was to design the Japanese Endurance car, the Dome. He was then appointed chief designer on the RAM F1 team.

Peter Gethin (born February 21st, 1940) has been the team manager since late 1983. A former F1 driver (winner of the 1971 Italian GP in a BMW), he went on to create his own F2 team. He also spent some time in CANAM (with VDS).

Gordon Message (born April 7th, 1954) came straight fro March to Toleman in 1979 as the chief buyer. He was the man who helped co-ordinate the F1 team during its creation and is now Gethin's assistant.

Chris Witty (born May 26th, 1950) ex-journalist, now deals with the team's public and business relations. He is capable of extremely daring feats (he created his own F2 team at 20!). Chris Witty is particularly known to the British TV public for his child star appearances from the age of 4-20

TG 185 SPECIFICATIONS SHEET

Chassis: Carbon monocoque. Weight: 37.2 kilos/81.8 lbs.
Suspension: Front — double wishbone with pullrod; rear — double wishbone with push-rod and mini rocker.
Transmission: 5-speed Toleman gearbox. Clutch: Borg and Beck.
Brakes: Single Brembo caliper per disc (280mm).
Cooling system: Behr intercooler in left side pod, water radiator in right side pod.
Dimensions: Wheelbase: 2,690mm.
Front track: 1,816mm
Rear track: 1,682mm
Length: 4,622mm
Width: 1,400mm
Height: 965mm
Weight: 540 kilos.

HART 415 T

Type: 4 cylinder in-line. Aluminium block and cylinder head, 4 valves per cylinder. Belt driven double OHC. Engine size: 1494cc. Bore and stroke: 88 x 61.5mm.
Injection: Digital Hart/ERA. Ignition: Magneti Marelli with Month converter.
Supercharging system: Single Holset turbo. Intercooler lowers temperature from 200° -40° C.
Maximum power: 740 bhp + at 10500 rpm, with boost pressure set at 2.5 bars. 700 bhp at 2.3 (race setting). Maximum rpm: 11000.
Weight: 134 kilos/294.8 lbs with turbo, wastegate, exhaust, ignition/injection, clutch, but without intercooler.

RENAULT FLAT OUT

FOLLOWING THE UNEXPECTED DEPARTURE OF LARROUSSE, THE DEFECTION OF THEIR CHASSIS ENGINEER, A DISAPPOINTING 1984 F1 SEASON AND THE PLUMMETING OF PRODUCTION MODEL SALES, RENAULT HAD ENOUGH REASONS TO PULL OUT OF F1. BUT THEY HAVEN'T. QUITE THE OPPOSITE IN FACT.

The Régie Renault did not seize the chance of gracefully bowing out from the GP circus when Michelin announced their withdrawal from F1 and move into other activities like rallying, for example. No, Renault refused to be led into temptation by the number one French tyre manufacturer who provided the perfect alibi. They wasted no time in naming their new competitions director, a new team of engineers, and that, together with a good measure of motivation, has safely set them back on the trail for a new season starring the famous pair, Warwick and Tambay once again.

"This could have been an ideal opportunity for us to announce our retirement," Jean Sage commented. *"We had all the best excuses. We were in fact worried that the anti-F1 faction would stir up trouble when they heard the news concerning Michelin. If Renault had taken the decision to finish with F1, we couldn't have hoped for a more opportune moment. No-one would have been able to point an accusing finger at us, there would have been no room for criticism. As you can see now, Renault Sport is going to continue to pursue its F1 activities. We are alive and raring to go!"*

RENAULT IS BACK ON THE TRAIL FOR A NEW SEASON STARRING WARWICK AND TAMBAY.

The huge infra-structure at Renault was momentarily put out, but not for long. Business has resumed as usual and everything is back to normal. The attitudes of the drivers too, during the off-season have succeeded in shifting the colossal Régie machine into a higher gear. Renault are prepared to accept the rules of the game in their quest for a title and to try and regain a little of the ground that was swept away from under their feet. This time three years ago, Renault set itself a target and, although it appeared that all the ingredients were there during 1984, no sacrifices will be made this year to jeopardise their chances of success in 1985.

"The new boss, Gérard Toth, is an ambitious man who will have at hand a more highly developed range of technical resources to help him in his burning desire to win. I don't think that the measures we have taken leave any doubt that Renault are looking to win. The team has been reorganised, extra hands have been brought into both the engine and the chassis departments."

Although Ligier were quick in securing the services of both Larrousse and Tétu, it appears that their departure triggered off a phagocytic reaction. The underlying question is whether the French are capable of supporting several F1 teams and wouldn't Renault have been better off playing the part of engine supplier and developer?

The fact remains that 1984 didn't fulfill the expectations we had of a successful season with two new and hyper-motivated drivers at the wheels of two well-prepared race cars which appeared to be as competitive as any of the other cars on the grid. Backers like Elf and Renix were there too. The opening round soon dampened the optimism at Renault Sport. Warwick took command and built up a 35s lead at the Rio GP, but had to retire when he tangled with Lauda. Tambay had his first experience of what it feels like being left high and dry on the track with an empty fuel tank. The rest of the season was a succession of depressing let downs, whether due to insufficient technical know-how — running out of fuel — or errors out on the track (Warwick at Dallas), or fate (the Monaco pile-up), or extremely irritating minor problems (snapped throttle cable at Monza). Who can blame the drivers if they lost their calm or their enthusiasm from time to time? Both Tambay and Warwick went through a low psychological period. The British driver's reaction was to attack, to fight his way up through the pack — which didn't always give the desired results. Tambay, on the other hand, lost faith in himself as a driver and in his will to win. But they both had the merit of voicing their frustrations and the real problem was identified as being a lack of harmony between the

RE50s and their drivers. They, the men, were trustworthy, sturdy and capable of putting in excellent performances — but the machines didn't share those qualities. For this reason, the car will have been completely revised before the start of the '85 season.

But let's go back to Larrousse and Tétu's departure from Renault. Perhaps we missed the warning signs of the looming storm clouds. Jean Sage was a close friend to Larrousse and he was just as surprised as we were when he heard the news. *"I was aware that Tétu was contacting various other teams, including Ligier, and he was quite open about it. Michel is the kind of engineer who prefers working with a small team where human relationships are all-important. He is intimidated by large teams and he had already announced his wish to quit Renault once, but I managed to persuade him to stay on. I would never have believed, though, that Gérard would leave us and that sparked off Michel into definitely taking his courage in two hands and leaving. It was as though Gérard's going to Ligier acted as a kind of guarantee that he was doing the right thing. When I thought about all that later on, I realised that his actual leaving wasn't so surprising after all — his going to Ligier was what was difficult to understand. But that's his problem, not mine. If you want my opinion, I'd say he left because he felt free to do so; he would have preferred a freer rein in managing Renault Sport, more like on the British teams."*

BRABHAM IS THE ONLY TOP TEAM THAT EMPLOYS A SMALLER WORKFORCE THAN US.

"Yes, I know quite a few people would agree there, but certainly not everyone. They just haven't thought of all the problems that would result concerning unemployment, lower sales figures and so on. I wish some people would think a little more before they say the first thing that springs to mind. The Régie and the state accept our F1 expenditures as justifiable for the simple reason that we don't just spend, spend, spend. The Renault Sport team isn't as large as many are led to believe. Only recently, I was visiting Williams and let me assure you that they have almost twice as many men working for them. If you compare their chassis and gearbox department with ours, they have a workforce of thirty more people who are also better paid and better equipped than we are. They even have their own wind tunnel incorporated in the workshops. The picture is the same at McLaren and Ferrari etc. Brabham is the only top team that employs a smaller workforce than us — fifty five people are on their payroll. We are behind in our investments — I mean it. Tambay's engineer, Carletti (ex-Ferrari), has been with us for a good year now, and during that time, he has been

Softly, softly

About 100 yards from the notorious Signes curve which ends the long Mistral straight on the Paul Ricard circuit, there is a spanking new hangar covering about 500 square meters. There is an inner courtyard and the whole is surrounded by the kind of fence that would discourage even the most James Bond-like of F1 fans. Access to (or from) the circuit is through two hefty iron gates. Tambay and Warwick put in one lap after another and give a one-arm wave each time they whizz past the grandstand. The shed has become their new base and new workshop — an isolated place indeed. Just the right conditions for efficient work, far from the eye of the madding crowd. Renault Sport pay the equivalent of about £25,000 rent per annum for this their new premises, without counting the cost of hiring the circuit each time they want to carry out tests which comes to about the same figure. Here, there is nothing to distract them from their work. It's warm, well-lit and even the press have a hard time getting in to distract them! Renault have the added advantage of having an ultra-sophisticated timing system. *"This workshop has been built to make working conditions easier for us,"* Jean Sage admitted. *"We are safely sheltered here from the rain and the cold; just as importantly, we have got all the necessary shelves and cupboards for our equipment, plenty of space to work in and the possibility of getting partial times through the turns. We've even got the heating and lighting installed and there is an office and a phone with an outside line. You can't imagine the difference it makes now that we're out of the usual pits."*

Renault have followed in Ferrari's footsteps in creating their own circuit-home, but Ricard is not like Fiorano, on the Scuderia's own door step. Five hundred miles of motorway have to be covered first, but that may only be temporary. *"We'll only be using this set-up from time to time, but we're hoping that eventually we can get a full-time development team down here, which will save us from having to move all the heavy equipment around each time and we could then rationalise our development department."*

What exactly is this sophisticated timing equipment of Sage's? *"On the track side, opposite the building, we have a station linked to various cell barriers situated at the Méjannes exit, another just at the exit of the left-hander after the pif-paf. These are strategic points for us and we can also foresee the possible risks of lateral accelerations."*

No doubt, Renault's initiative will have some turning slightly green. Ferrari have much better facilities at Fiorano — with their own video camera in each turn, a telemeter and so on, notwithstanding the immense advantage of just having to push their cars out of the workshop and onto the track. Considering that Renault didn't have much choice in the matter, it's a promising start. They do have their own private testing circuit near Paris, but it is reserved for production models. There is a very full programme with practically no room at all, and apart from that problem, the circuit is not at all suited, from the point of view of security, or noise restrictions for F1 race cars.

comparing the two systems. One day he came up to me when the finger was being pointed at us because of what we cost and said, "You spend a lot less than Ferrari you know, a lot less." I trust his appreciation of the situation. Bear in mind the market for Renault production cars. You must compare what is comparable — I mean, are you supposed to take makes or groups into account? In all fairness, I must admit that we are going through a rough period. Some Renaults, like the R25 are selling well, whereas the Super 5 hasn't really taken off. I'm sure that once the public are aware of the enormous potential of this car, sales figures will soar. We were unfortunate in that it came out after the 205. Getting back to the subject, Renault has no other alternative than to carry on in F1. There are several reasons for this. The first is that this F1 involvement brings a bit of life into the group which also stimulates the men into putting more spirit into their work. Let me assure you, there are more people in favour of continuing in F1 than against. The picture isn't that bleak at all — Renault Sport has fifteen GP wins on record and was responsible for the dawning of the age of the turbo. 1984 wasn't a brilliant season by any means when we had more than our fair share of technical problems and bad luck. We could have won at least two GPs, Rio and Dallas, early on in the season and perhaps Monza — if we hadn't had the fuel consumption regulations to deal with... but if we lived in a world of "ifs" we — and the other teams — would all be world champions!"

Jean Sage, the man who had shared the ups and downs at Renault with Larrousse, suddenly found himself alone in the midst of a huge team. Did he consider trying his luck elsewhere? It wasn't really the time to think about moving as he was one of the only people fully conversant with the workings of the team.

"Although Gérard is still a friend, I stayed on at Renault because I wasn't sure that he was right in moving to Ligier. I appreciate his personal and professional motives in leaving Renault but not why he went to Ligier. I don't think I could work efficiently and productively there and I'll stick with my job at Renault as the Sporting Director. Anyway, Gérard never asked me to go along with him."

WE DIDN'T OFFER DUCAROUGE AN ASTRONOMICAL SUM TO COME OVER TO OUR SIDE.

Now we get to the big question. How come Gérard Toth's appointment brought with it more technical and human resources as well as rekindling the team's motivation to win? Wasn't Larrousse capable of it? Or, is this the team's final spurt of energy in their last bid for success? It could also be the Régie bounty hunters' way of covering up the tracks of their fugitive. *"Larrousse's departure may have opened up the eyes of certain people here. There are some things that aren't really my business and which I don't quite grasp. Anyway, everything possible is being done and I can't see anything to stop us from going ahead and fulfilling our plans. Work has been intensified, even in the chassis department. There's no denying — Renault is here to race Renault single seaters, sporting the Renault colours with Renault engines! We haven't tried to replace Gérard although at one point we were looking for a top engineer, but that was before he left. There is no truth in anything that you might have heard concerning Murray, Head, Ducarouge or Forghieri. And we didn't offer Ducarouge an astronomical sum to come over to our side. When you think about it, it would have been an extremely delicate situation having him here. After all, Lotus is our number one F1 partner and we can't spoil our relations with them because they are a competitive team upon which Renault depends. We would have made a grave error in accepting a situation like that."*

The new boss was against enticing an ace over to his team, favouring internal promotion, with just one exception. The present set-up still has a few changes to be made to it which should be announced during February. No-one can say that Michel Tétu's leaving Renault has left them in a state of stagnation — far from it! The RE60 development project has been completed with just a few finishing touches left to be made to the bodywork. There was no disruption at all to the programme. Jean-Marc Dada is fully competent to take over in the research and development workshops, having seconded Michel Tétu for several years. Renault Sport chose another promising young man to fill the job of

Track Director, Patrice Ratti. He worked on Derek Warwick's car during testing at the Paul Ricard circuit before John Gentry joined the ranks. As you are aware, Gentry used to be Rory Byrne's right hand man at Toleman until he left the team to take over from Brunner at Euroracing. A week later he had left Italy and was settled in the Viry-Châtillon workshops where he will be responsible for Derek Warwick's car on the track. A mirror-image of the Carletti/Tambay tandem, Jean-Claude Migeot, Tétu's ex-assistant, is putting the 1985 Renault through the final wind tunnel tests.

What are the outstanding features of the RE60? Its strong points and its weak points? Renault aren't saying very much. *"The single seater has been entirely revised,"* Sage told us. *"There is a new gearbox, a new engine and unique Renault bodywork which we haven't copied off another F1 team — not even McLaren!"* To know more we'll have to patiently await the FOCA testing session in February. *"All I can say is that we will pursue our testing programme using the RE50 for as long as possible. It is being continually reconditioned. Each time we find a modification to be satisfactory, we will apply it to the RE60. Otherwise, we drop it and try something else."* New pushrod suspension has been mentioned for 1985 in replacement of the pullrod-type of 1984. SEP carbon brakes will again be featured. *"Our drivers are now used to them and we have developed home-made calipers which ensure efficiency, consistency and reliability. An important point."*

The bulk of the Régie's work naturally concerns the engine and the injection system. We mustn't forget that the Régie was responsible for the most important technological change in F1 which completely reversed the taboos surrounding supercharging, in a similar way to the Chapman-inspired ground effect revolution. Unfortunately, Renault have not reaped the fruit of their daring move. Is there hope, after all these disappointing seasons, that the French V6 will one day taste success? After all, this will be its eighth season... *"Our new injection system is fitted with Weber injectors which seem to be behaving reasonably well,"* Jean Sage confided. *"We are still working on them. Fuel cooling has been banned for 1985 which means that we'll be about 10 litres short! In 1986, the fuel tank capacity will be limited to 195 litres instead of the present 220 litre limit! We've got a great deal of work cut out for us over the next two years. It's surprising to see that McLaren are staunchly opposing the ban on refrigerated fuel. They say that their electronic injection system gives very good results with cold fuel. We aren't only thinking of the new regulations, we haven't lost sight of the fact that if we compete in a GP with less than 220 litres, it means that much less weight for the accelerations, braking and tyres etc."*

Attention to detail

The engineers at Viry had promised a bright future for the new V6 EP4 at the beginning of 1984. The following modifications had been made to their 1983 model: improved turbine and compressor performances, less throttle lag, redesigned piston heads to improve on combustion, new cylinder casing, reduction in weight and so on. Garrett turbos were fitted in place of the KKKs and a Renix electronic injection system was also being used for the final GPs of the season. In conclusion, either an insufficient number of modifications had been made, or Renault had been directing their efforts in the wrong direction. Fuel consumption figures were so high that the engineers found themselves spending all their time working on that, rather than on increasing horsepower or improving on reliability. Bernard Dudot looks back on this period objectively: *"We had put in quite a lot of work into the engine but, compared to the other teams, we obviously hadn't achieved as much, especially concerning reliability and performance figures. Psychologically, we suffered a severe set-back following the two early-season incidents which were no fluke. At Rio, we miscalculated the fuel consumption figures — that was our mistake. At the South African round, the injection played up. At Imola, we decided to tell the drivers to ease up on the throttle as we believed at the time that the other two retirements were due to the high fuel requirements of the engine."* That was what caused Warwick to say that there was no point in taking part in a GP if he couldn't go beyond 9500 rpm. Yet another misconception.

"We were barking up the wrong tree because the fuel consumption problems persisted — we had to find something else." Larrousse then announced his ultimatum — either the problem was solved or they would stop for six months! *"Larrousse's intention was to get the team to speed up their work — how could we! Almost everything had been revised during 1984, with particular attention being paid to the combustion chamber and the distribution. Our cars were the only ones equipped with a flow meter so that the drivers knew exactly how much fuel they were burning. At the end of the day, this gadget hindered more than it helped in giving vital information to the nearest litre. How can you concentrate on both driving and the dashboard?"* The key-word for this season is *"development"* which will concern the entire engine. *"We tested various versions of the V6 during the practice sessions prior to some of the GPs, like different compression ratios, in anticipation of this season. There is absolutely no comparison between the V6 we had in 1979 and the engine we have today — the only common factor being its fairly similar base."* Radical steps are therefore being taken for the 1985 version: lowering the centre of gravity, easier access to the engine, modification of the bore and stroke, a fundamental point. The actual block is a pale imitation now of what used to be a F2 base. Is there anything left of it? *"Having such a specific origin has its pros and cons, I agree. The bore and stroke ratio and the thermal output are derived from it. We've got to work on development. For us, the principle of the V6 is the best suited to F1 as everything depends on it — the symmetry of the cylinder rows, the controls, the installation of the two small turbos, the two intercoolers, the circuits etc. Everything is made that much easier with a V6 rather than a 4-cylinder engine. The 1500cc version has a long life mapped out ahead of it. We've got plenty of time to decide whether a 4-cylinder or 6-cylinder unit will best suit the future 1200cc ruling — and who knows what else will have changed by then!"* The 100% electronic Renix injection system has been steadily proving itself throughout the testing programme. *"It offers a very sophisticated management system of all the functions — from the advance to temperatures, hygrometry and so on."* Even Bosch are impressed! *"Seeing that we were starting out with nothing in our hands, our target was to try and produce something even better than them! There's no point in not trying to outdo your rivals if you can, is there? Take the Porsche engine for a good example of the kind of results that this approach produces. Just look at the technical features of their power plant which has been specifically designed to meet F1 requirements. To catch up, the other teams, including Renault, have had to work hard on thermo-dynamics and all that."* Let's hope that now the lesson has been learned!

GOODBYE MICHELIN, HELLO GOODYEAR!

There remains one uncertain point. No-one can say just how the new tyres are going to affect the RE60s. Goodbye Michelin, Hello Goodyear! *"Michelins are better than Goodyears, Goodyears are better than Michelins... all that's stopped now and almost everyone will be on an equal footing this season. Like all the other ex-Michelin customers, we've had to adapt the tyres to our suspensions, or rather the other way around, as we've had to rethink the entire car out. But we think we've managed, as our drivers' lap times on the Paul Ricard circuit go to prove. We're feeling optimistic. Our engineers are used to working with radial tyres. Goodyear co-operate and we have good relations with them despite their having a different work policy to Michelin's. We have to go and fetch the tyres from their truck, whereas Michelin used to bring them right up to the pits!"*

Life at Renault continues despite two key-men leaving without so much as a farewell party. Perhaps it will mark a period of change in the way things are done at the Régie? Only race results will be able to tell us that. The Régie is about to play an important card. It had better be the right one for its own good and for the good of their potential market. Next time, there won't be any excuses left to make. ■

MAGĒIA

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THE LOLA/BEATRICE F.O.R.C.E. FULL OF DOLLARS

FORMULA ONE IS IN FOR A BIG SURPRISE. THE ITALIAN GRAND PRIX HAS BEEN CHOSEN BY A HIGHLY AMBITIOUS AMERICAN TEAM TO MAKE THEIR FIRST OFFICIAL RACE APPEARANCE. IT'LL CERTAINLY GO DOWN AS BEING ONE OF THE MOST DARING TECHNICAL, SPORTING, POLITICAL AND FINANCIAL MANOEUVRES SINCE ROGER PENSKE. THAT WAS IN 1974, WHEN THE DOLLAR MEANT A GREAT DEAL LESS...

The Haas/Lola/Beatrice is still on the drawing board. The mock-up gives you an idea of what the future F1 will look like.

Once upon a time, in 1894, there was a small village called Beatrice in the woods of Nebraska. In this little village, there lived a man who sold fresh eggs for a living. Thanks to his hard work, and that of his chickens, he soon became prosperous and founded a company with lots of branches full of fresh eggs. Later on, he added a variety of other products. Today, some 91 years later, Beatrice Foods is worth more than its weight in gold. The head office is based in Chicago. There are subsidiary companies all over the world in over a hundred countries including China, Hong Kong, England and so on. Beatrice Foods is the number one company for consumer goods in the states. In addition to eggs you can shop for anything your taste buds fancy, from peanuts to sweets to orange juice. It would be an understatement to suggest that Beatrice Foods was a profitable organisation. Samsonite suitcases, Avis, the car hire people, STP and a couple of supermarkets have all been integrated into the empire, Playtex — the cross-your-heart bra! — Max Factor, clothes shops and so on and so on. Long live the dollar! Beatrice Foods is a company with a difference. Instead of hoarding their cash, or running up a huge expense account like many other concerns, they use it to give their products a dynamic image and as an incentive for their partners. A revolutionary approach for guaranteed impact. In keeping with American tradition, Beatrice Foods conducted an *"international"* opinion poll to determine what was the best way to get their name across. Answer — motorsport! — Not any kind though! Indy for the States and F1 for the rest of the world. *"We want our name to be seen on all six continents"*, explained Miss Dutt's Daddy. *"F1 appears to be the most effective means of doing just that. A F1 car has the advantage of not only being international but it also appeals to a great number of younger people. We have to adapt to the new generation, they'll never adapt to us! We have a hundred different possibilities for promoting our name through F1. To be frank, we all appreciate sport as a means of communication. F1 also reflects our outlook — it's gripping and it's exciting."* Well, how about that then? And are the financial rewards as 'gripping' and 'exciting'?

"Of course they are." Full stop. After all, they do have a budget of $80 million for their double F1/Indy programme to tinker around with. When you consider the rate of the dollar, that's quite an impressive figure. Many teams would be happy to have a budget like that for a five-year programme.

The next VIP after Beatrice, Carl Haas, 55-years old, born in Chicago. Distinguishing characteristic — smokes three huge cigars per meal. In the States his name and face are synonymous with Havana, Lola and Victory. The former GT driver is now the American importer for Lola and Hewland after starting out with his own private team in 1973. Since then, the money has been pouring in. Out of a total of 114 races, he chalked up 51 wins, seventeen 2nd places, he finished 81 times in the first five, 94 times in the first ten and he also made $3 million in prize money. A mere trifle. And, what about his professional record? Nothing simpler. He hired on Tambay in 1977 to drive a Lola CANAM. The title was his. Then in 1978, he entered a car for Alan Jones (interesting) and was rewarded with another title. Tambay returned in 1980 to notch up yet another championship win. We'll stop there. In all he acquired four CANAM titles. His most coveted title is certainly the 1984 Formula Indy crown with the Lola belonging to the Haas/Newman team, when the Lola-man coupled with the famous actor in the name of motor racing. The driver was none other than the Italian immigrant to the States, Andretti, who was named 'Driver of the Year' for the third time in thirty years!

All aboard! The entire management staff of the consortium Beatrice Foods had taken their jet (inexpensive at £400,000) and were bound for Chicago. The purpose of their journey? A press conference to reveal their F1 project and the Indy programme. The next day, it was on to London for the European press launch. They were in Paris that same evening with a few surprise guests to meet both the FISA president and four French journalists. After a night's rest, they had arranged a friendly visit to the Commendatore Ferrari — perhaps to find out if this legendary figure actually existed at Maranello? There we were, that Tuesday evening, at the first class Parisian restaurant, Lasserre, to talk motor racing. James Dutt, the managing director of Beatrice Foods, Mario Andretti, Bernie Ecclestone, JM Balestre, Alan Jones, Martin Burdett (the American ACCUS Federation President) and Carl Haas were amonst the guests — all influential politically from the mere fact that they have money — and lots of it! We began joking about who we could kidnap and hold to ransom —Balestre? Madam quipped that she'd make a contribution if we would keep him! And Andretti, how much is he worth? He made $1 million in prize money last year in the 1984 Indy championship. Then there was Ecclestone — but it would be difficult finding someone to pay up for him. Haas had won $3 million in prize money over eleven years in racing. James Dutt? No chance — he's too well protected. In fact, the ideal person to kidnap would be Miss Dutt, his charming daughter sitting with us at this huge round table.

The usual round of thanks was given at the end of the meal and the speeches began. *"Ladies and gentlemen, I would like to thank you on behalf of FISA and motorsport in general, and F1 in particular, for being here. I'm particularly pleased to see that the Americans are making this year their come-back to F1. Thanks to your effort, familiar faces that left the scene will be back. People like Teddy Mayer, here with us this evening. Thank you Teddy for coming back..."* JMB and Teddy rose and embraced each other in typical French fashion. The president cast his eye around the table. After all, it *was* possible. Was he going to, yes or no? Yes, he was actually going to talk to him! *"And I would like to take this opportunity of thanking you too, Alan Jones. It's nice to have you back!"* He stepped forward two paces and held out his right hand. The Australian pushed back his chair and walked towards the president's outstretched hand. He shook it warmly. There was no embracing. A handshake sufficed. Especially bearing in mind certain incidents during the ex-Williams driver's blustery last season. In those days, he would rather have dealt a blow out of anger and rebellion. Well, there's nothing like a slap-up meal, with a touch of goodwill to forget all that and let bygones be bygones!

A MIXED MARRIAGE

Then it was time to talk shop. After all that was why we had come — to find out about the new American team, or rather, the Anglo-American effort. There's a great deal more to this story than meets the eye, and it's a complicated one.

The picture wouldn't be complete without Teddy Mayer and long-standing partner, Tyler Alexander. Mayer obtained degrees in political science and law, but decided to devote himself to motorsport the day his brother, Timmy, was killed driving a McLaren Tasman. He joined Bruce McLaren in 1964 and took over when the New Zealander tragically met with death in an accident. They obtained two world titles in 1974 (Fittipaldi) and in 1976 (Hunt). Together with Tyler, he tried out his luck in Canam and Indy during 1966-67. When Ron Dennis became the McLaren commercial director and team manager in 1980, Mayer sold his shares and concentrated his efforts into his other interests which included a ski factory in Canada, McLaren Engines in Detroit and Nicholson McLaren Engines in England. Enough, one might have thought, to keep him busy. Not enough, however, to quieten his passion for racing. Teddy was in his fifties when he created Mayer Motor Racing in 1983, in order to race a March in Formula Indy, with Tom Sneva at the wheel. The old devil soon acquired a new lease in life. His driver scored his first win at Las Vegas, the closing round of the season. But, Mayer's mind was on other things — F1! He had spent a whole year rivaling with Carl Haas and during that time had cogitated upon making a come-back to F1 and taking on his opponent for partner. When you can't beat'em, join'em! Discussions took place with Broadley, the Lola/Indy constructor for a chassis. Eric didn't think too highly of F1 since Graham Hill had died in a plane crash with Tony Brise and members of the Embassy Hill team (an umbrella for Lola). He was both jealous and yet haunted with fear. But, on the other hand, why not? Especially since F3000 was also on the programme. The prospect of charming Beatrice dangling before his eyes didn't leave him indifferent — or anyone else for that matter. Talks commenced, a project began to take shape, then a calendar was established and it was full speed ahead.

Carl Haas Ltd was created in the States to officially enter a racing car constructed by the British company, F.O.R.C.E., who were working from Mayer Motor Racing's premises at Woking in Surrey. FORCE has existed since December 1984 and stands for Formula One Race Car Engineering with Carl Haas, the chairman, Teddy Mayer, the managing director, and Tyler Alexander and Eric Broadley, the directors. For the workshops, they took on top engineers and mechanics with little difficulty, in view of the attractive salaries they could offer out of their substantial budget. Ducarouge refused when he was offered a job, preferring to stay on at Lotus. Broadley engaged two other experienced people to assist him — John Baldwin (ex-Lotus, McLaren, Shadow, re-McLaren and Spirit) and Neil Oatley, who was the track engineer with Williams for seven years! Don Beresford also accepted to take charge of the composite fibres department, Ray Grant for the assembly work, Phil Sharp, the job of head mechanic, Ross Brawn (ex-Williams), for the aerodynamics, and so on and so forth...

The smart Lola has been officially named the Beatrice/Lola THL1. It was constructed by Broadley, this time in his role as chairman of Lola Cars Ltd. Once the shell, suspension units and various accessories are complete, it will then be sent on to FORCE. In simple terms, it means that Haas and Mayer have a joint venture to race a Lola and their project is financed by Beatrice.

Nothing is very clear for the moment concerning the power unit. Originally, the idea was to feature the future Ford turbo, but that, officially, has come to nothing. Ford have announced plans to create its own team or, to start with, they are considering the possibility of giving their engine to an already-existing team. Brabham perhaps? Charlie Stuart's nomination as the Haas commercial director immediately had everyone thinking TAG/Porsche in view of the ties between Stuart and Ojeeh. But, that wasn't it either. Rumours then went round about a contract with Renault, who would have had an ideal opportunity of making good use of the publicity in AMC country. The answer, there too, is no. That leaves Hart. (Soon we'll be buying Hart engines at the supermarket if things carry on at this pace!). There will certainly be many more rumours circulating if the Haas/Lola project comes off. Musn't forget the Japanese and of course the American engines — which Beatrice would appreciate more than anything. Who? Well, Buick of course! Suspense, then, until the first planned race at Monza for the Haas Lola, the first American team, apart from Penske, to try things the European way. A case of getting back at Long Beach, Dallas, Las Vegas and all those who said that F1 was *"dramatically European"*. ■

Alan Jones' come-back to F1

A changed man indeed! He smiles and jokes and even answers when we talk to him! Admittedly he fills out his smart blazer and grey flannel trousers, creased and rumpled from his air-tour. But he's here and looks as though he's enjoying himself.

The Australian former F1 champion first worked with Carl Haas in 1978 in the CANAM championship, which he won. He also raced with the Williams F1 team that same year and he stayed on until the end of 1981, when he decided it was time to retire from F1 and busy himself with other things, like his self-service repair shop concerns. *"I'd had enough of continually having to pack and unpack my bags. I wanted to finish with all that travelling and live at home. I'd lost interest in F1 because I didn't feel I was getting anything out of it anymore. Driving skills just weren't important with ground effect cars. It wasn't us, the drivers, who mattered anymore, but the cars."* Back home in Australia, Jones soon began languishing after his past career. His passion for race cars was still very much alive and kicking. He couldn't resist temptation and entered saloon, GT and later Group C races until he eventually found himself at the wheel of a Porsche 956. In 1983 he tried a come-back with Arrows, but the money wasn't really enough for him.

Against all logic, Jones left his chain of self-service workshops, found someone to run his farm and moved over to Europe in June 1984. Beatrice was perhaps already behind the move. Not only that, he went on a strict diet too. He lost a stone of the weight he had put on when he retired, and is aiming at losing another one. If he doesn't, the Lola is sure going to look strange around the cockpit! Has the motivation come back? *"I would say that it has. I have decided to accept the challenge to make my come-back with a well-structured and dynamic team. I feel that my will to win is still intact and mentally I'm prepared. Motorsport runs through my veins. It's like a drug. It seems that F1 has become a highly serious affair and the competition is fierce. I spent a long time wondering if I ought to come back to F1. Niki Lauda's example helped assure me that I was making the right decision. If he can do it, why can't I?"* If, by some freak chance, Alan Jones' motivation didn't come back at the first turn of the circuit, there's no doubting that his ruthless character will provide whatever's lacking. Not to mention the $750,000 fee for the 1985 season.

His season will start towards the end of June, beginning of July. *"Construction work on the car began in December. At present, they are taking the car through wind tunnel tests. We're hoping to do our first private testing soon in Europe."* Rendez-vous at Monza on September 8th for their first GP!

OL' MacDONALD HAD A RAM

RAM HAVE A NEW ENGINEER, A SUBSTANTIAL BUDGET, AN EXPERIENCED DRIVER AND ONE OF THE BETTER 1985 SINGLE SEATERS. RED-HAIRED JOHN MacDONALD HAS REACHED A CRUCIAL TURNING POINT IN HIS CAREER AS TEAM MANAGER.

Well that was one presentation of a 1985 F1 team that didn't go unnoticed! Journalists from all over the world were invited to the Hotel Intercontinental in London, in the presence of the vice-president of US Tobacco. There was no mistaking. The luxurious setting had been purposefully chosen to show that John MacDonald and his men have no intention of hiding their high ambitions for the new season. The RAM 03 was sitting there patiently, proof that they mean business. This single seater is the fruit of the combined efforts of RAM and Skoal Bandit and is certainly the most sensational race car to come out of the RAM stables. It also appears that, this time, RAM rightly deserves its place on the GP starting grids. From the technical point of view, this F1 is not far behind the leading cars. Why? The reasons behind its apparent success, and all the hopes that have been placed in it, are clear cut. Starting with the budget. Although 1984 was devoid of any good results or points and full of technical problems, Skoal Bandit decided to pour a vast amount of money into the RAM/85 programme. They were even willing to cut off a large amount of their sponsorship involvements on the American continent. Comtesse du Barry (foie gras) also chose to further their backing and there is a discreet backer in the person of Pink Floyd drummer, Nick Mason, who charitably provided the necessary funds for the engines during 1984. John MacDonald has approximately $4 million at his disposal, which includes the drivers' salaries. The first vital necessity that John invested in was a top engineer, who came in the person of Gustav Brunner (ex-ATS and Alfa). Next he got himself an experienced driver, Manfred Winkelhock, and then shopped for the remaining structures needed by a top F1 team. *"1984 wasn't a good season by any means, as far as results go,"* admitted John MacDonald.

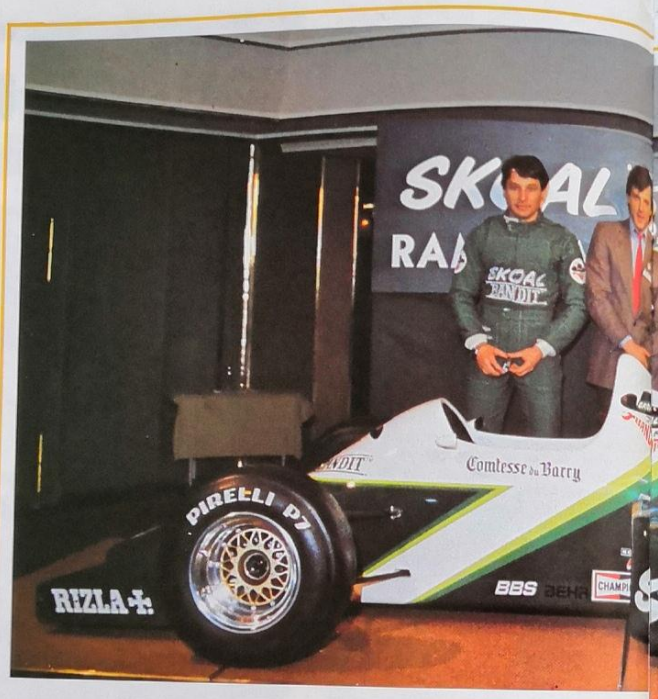
"But, we gained in experience from which we'll be reaping the harvest this year. Nothing in F1 can be put down to

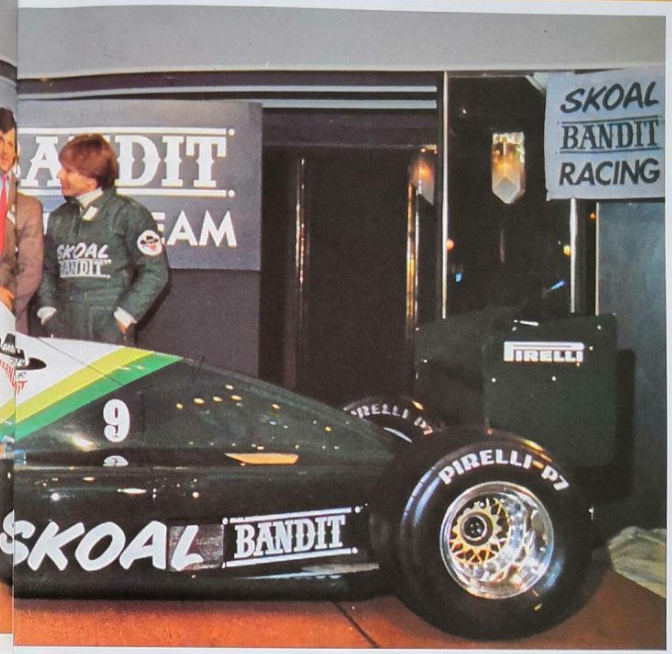
sheer luck. If you've nerves made of steel and the money, you can do whatever you like. A substantial budget, a top engineer, competitive material, a high-performing engine, talented drivers and high ambitions! Since F1 has gone turbo, the cost of Formula One has multiplied by ten in no time at all. If you haven't got the right money, forget it. I'm positive that 1985 is going to be a great year for RAM." Good ol' John! He's a far cry now from his second hand car sales and is now continuing a fine British tradition. He's a wily character, no doubt about it, but he's a shrewd businessman with loads of willpower. He's more than sufficiently motivated and armed to the teeth with his passion for cars.

BRUNNER, A FREE MAN

Gustav Brunner was born in Graz, Austria, 34 years ago. His automotive career up until now has been varied — Indy and F3 with Lauda in 1969, BMW in 1970, ski bindings, surf boards, motor bikes and side cars until 1977, F1 in 1978, when he was chief engineer with ATS. Actually he wasn't really the *"chief"* because the real chief was Gunther Schmid, the team's boss. Brunner did a little *"free lancing"* on the side with the Maurer F2, for example, in 1982. By 1984, he had had enough of the ATS set-up and joined Alfa Romeo where he was put in charge of the 184T and 1985 development projects. There, he came up against Latin temperament which was diametrically opposed to his and Brunner just didn't feel at home. He packed up his bags once more, and headed for Bicester in Surrey where he knew that his close friend, Winkelhock, would soon be arriving. Dave Kelly, the former RAM engineer, has gone over to Toleman to replace Gentry, now working at Viry Châtillon for Renault Sport. Brunner had already set up home in England by the 84 Portuguese GP. In just three months he had designed and constructed his first model of the new RAM 03, which will be used as a test chassis once the season is underway. Three other cars are being constructed for the GPs and should be ready within weeks.

What's so special about this RAM 03? The most obvious thing that hits you is its elegant shape and the obviously modern answer to technical problems. Its *"chic"* stems from its small dimensions, which must surely make it one of the smallest cars of the F1 circus, and from its design. It has a square nosecone, à la Williams, a Tyrrell 012-style hump in front of the cockpit, the top of the shell resembles the Brabham (with an integrated roll over bar), short narrow and very rounded side pods and pronounced waspish rear bodywork. It's extremely narrow because the bodywork at that point is even narrower than on the 1984 McLaren! Brunner has used various intelligent techniques, starting with the carbon shell (sub-contracted to a specialist in the matter who built other F1 shells, including the ATS). It's the parts you can't see that are particularly

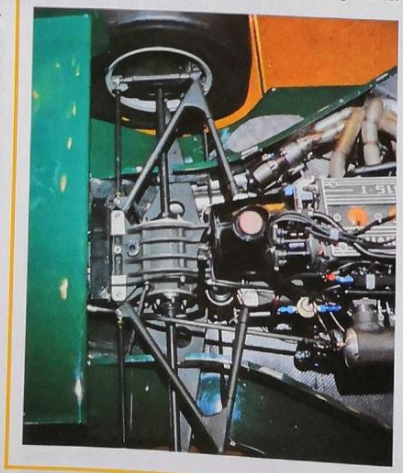


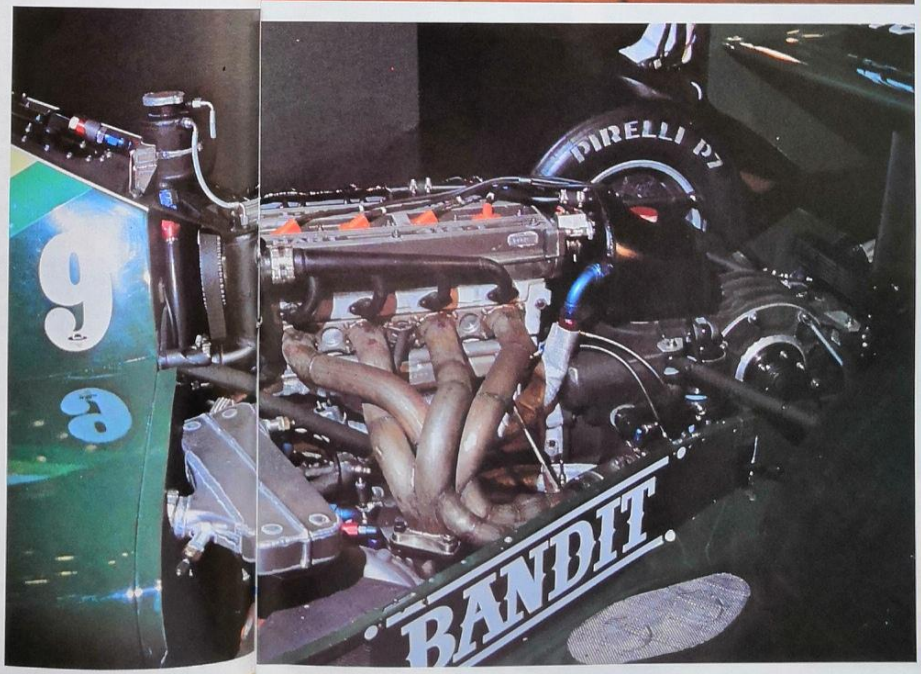


Alliot, Brunner and Winkelhock. The hard part has yet to come.

Admire the engine compartment. Heav'n's first law, a place for everything and everything in its place. Note the magnificent gearbox/spacer.

The rear track with its slim suspension and tight-waisted bodywork.





well-designed. The shell tapers into a point and has large cut-outs on the sides and rear, designed to allow the small HART engine to be mounted as low down as possible and to fit the large and bulky radiator and intercooler without having to make the side pods any bigger. Naturally, this means that the fuel tank capacity has been reduced and it now takes up a fair amount of room in the sides of the shell. Winkelhock's car is going to be modified since he is of a larger build than team mate Alliot, who fits snugly into the cockpit.

The Hart 415T engine is the electronic ERA version. The 4-cylinder power unit costs about £70,000 a piece, but RAM have been lucky enough to acquire privileged lease conditions whereby they are provided with 15 engines for approximately £600,000. Brunner has designed his own 6-speed gearbox with a single-piece casing which does the jobs of oil tank and spacer. The effect is pleasing to the eye, and contributes to providing a thoroughly rigid rear track. The engine compartment is astonishingly tidy. There are no loose wires, the hoses are all exactly the right length. Everything is compact, including the supercharging and cooling circuits, helped by the doing away with the classical oil radiator in favour of a mini aluminium intercooler, grafted onto the water pipes. *"The weight distribution of this car is perfect,"* Winkelhock confided, visibly overjoyed. *"The engine and its accessories only weigh 134 kilos. Compared with BMW, the difference is ginormous!"* Rumour has it that the car only weighs in at 540 kilos on the scales because ballast has been added to it... The suspension, with double wishbones and pullrods to both the front and rear, is relatively ordinary. It's worth noting, however, that the lower wishbone is now solid, and not hollow as before, and is so shaped that a large air extractor fairing can be mounted with no trouble. Brunner has taken great care with the aerodynamics which, on a car of this size, are of primary importance. He likes saying that he has already several rear and front wing models. Hours of wind tunnel tests, you cry... No! *"We were running out of time and were impatient to get the car out on the track. We haven't even been through the wind tunnel once yet!"* Isn't that rather unwise in view of the ultra-modern design and these premature wings, the streamlined cooling circuit etc., a case of the Austrian's imagination running wild? We're forgetting, Brunner was in charge of the Alfa development project! He must have come to RAM with his head full of ideas and plans for the future Italian car. Fortunately, when he crossed the Channel he didn't declare them... That's how he designed his F1 in record time! Those are the rules of the F1 game. Congratulations for such a striking car and let's hope that it will prove to be as efficient on the circuit as it looks. There's every reason to be optimistic.

This is the second time that Brunner has been allowed full liberty to express his ideas. On the first occasion, he produced the *"rocket"* Maurer F2... ■

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AS PER USUAL

PORSCHE'S NINTH CONSECUTIVE VICTORY. BOB WOLLEK, AJ FOYT AND PRESTON HENN HAD THEIR SECOND SUCCESS IN THREE YEARS AND THIERRY BOUTSEN AND AL UNSER SR HAD A SUPERB MAIDEN-IMSA RACE. TALENT AND EXPERIENCE WERE THE UNCONTESTED WINNERS AT THIS YEAR'S DAYTONA 24 HOURS.

"Indy stars AJ Foyt and Al Unser Sr teamed with road racing veterans, Bob Wollek and Thierry Boutsen to capture the 23rd running of the 24 Hours of Daytona..." read the local paper, the Daytona Beach Morning Journal, after the first round of the 1985 IMSA challenge. An all the more revealing title once you realise that Wollek and Boutsen drove for respectively 279 and 220 laps, whereas the local Indy champions only put in 125 and 79 laps each — mostly during daylight ! This year's winning drivers were all as experienced as each other, compared to 1983 when Bob Wollek and Claude Ballot Léna didn't take very kindly to a third surprise member invited to join them. Foyt has partnered the Alstatian driver for two years now, and highly respects his knowledge in Endurance racing. He follows the Captain's instructions to the letter. Bearing in mind *Super Tex'* careful start, Boutsen's finish and the logical and voluntary reduction of Unser Senior's stints, it's obvious that Preston Henn's outfit has come a long way in two years. The usual financial problems meant last minute changes as to who would be actually driving the cars. In the States, money always decides everything. At the finish, the Henn Swap Shop Team was presented with $30,000 for its win out of a total of $150,000 of prize money.

An impressive list of famous names were down on the entry list, promising an exciting race. It was an anti-climax, the only *"high"* moments being the start and the final hour, although that might be enough to leave a pleasant memory. It appears that both in Europe and North America, constructors are going to have to try even harder to contain the Porsche supremacy in Endurance, but that doesn't mean that races will be boring as a result.

MARCH AND BUICK

For some unknown reason, the programme for the Daytona 24 Hours was shortened by 24 hours. There was less time allowed for pratice and qualifying than in previous years and only took place on the Thursday and Friday. A practical solution, but few competitors

are willing to risk an engine blow the day before the start. Practice was a much calmer affair than last year, mainly due to the redesigning of the track. The only noteworthy withdrawals prior to the start of the race was the Sauber Chevrolet and the Osella BMW, which was a shame as it would have been interesting to see them race in an IMSA round. The March 85 Gs were ready and waiting, fitted with either Buick or Porsche engines. They were the bookies' favourites for pole position and John Paul Jr put in a new lap record during Thursday's session, in 1m 41.490s, at an average speed of 200 kph/125 mph, beating Bell's time of 1 m 41.508s at last December's IMSA Finale. Buick patiently waited until Friday evening to publicise John Paul's performance, even if it was obvious that noone would beat him. His time was recorded during the 20 minutes during which the first line grid positions were to be established. The 1984 winner just managed, by the skin of his teeth, to chalk up the second fastest time, giving March the front two positions on the grid. Behind came the 962s with Wollek, 3rd fastest (1m 43.588s), just behind, Sarel Van der Merwe (1m 43.208s). Bob, the Alsatian driver, was held up on Thursday morning when his gearbox fork suddenly jumped out of place for no apparent reason. The mechanics managed to get the No 88 ready with ten minutes to go until qualifying. The other 962s were either handicapped by tyres problems (Bridgestone for Boutsen, Goodrich for Mass), or by handling problems (short rear cover on Holbert's car). Hans Joachim Stuck was the only person who could have stirred up trouble, but he was prevented from doing so when his rear suspension broke, his foot hard down to the floorboard, whilst on the banking. The Bavarian succeeded in bringing the car back to the pits intact — and cooled down a little in the process! He was as white as a sheet when he climbed out of the car.

JOHN PAUL Jr. EARLY LEADER

Ford Mustangs dominated GTO (but were 2s slower than last December's record), with a Carrera 924 leading the GTU class, driven by Elliot Forbes Robinson, the former class record holder.

Bob Tullius, not too unhappy with his Jaguars only conceding 4 1/2s to the best 962s because, *"Those are realistic race times"*, he pointed out. Claude Ballot Léna proved he was the fastest on the second XJR 5. The French driver was amazed by a pair of glasses he was trying out which give the wearer perfect vision in the dark. The yellow flag wasn't waved at all during the two days of practice and qualifying — proof that the track had improved in safety over the past two years. However, the organisers couldn't be blamed for the main problem : the sun and the heat.

As usual, there were a number of (very) late entries on the grid for the Saturday start. Among these, most of whom hardly had enough time to get in a couple of practice laps, was the Downing/Maffucci/Katayama Argo-Mazda. Their late entry was accepted thanks to their recent good results and they started as favourites in the new Camel Light category (3000cc, 700kg). However, Bruce Leven's second 962, Fittipaldi/Garcia's March and Tico Almeida's 935, irreparable after a shunt, were amongst the non-starters. There were finally 76 starters, 6 less than in 1984.

It was very warm and there were plenty of spectators. The principal race sponsor, Sun Bank, had distributed a certain number of free tickets and the stands were full. That, coupled with the fact that the infield area was full as well, meant that the organisers had every reason to feel pleased with themselves.

The warm-up lap got underway after an hour or so of various ceremonies and parades. There were no incidents and the rolling start got the race off to a perfect start. John Paul Jr and Sarel Van der Merwe got away extremely quickly and were soon ahead of the pack which was led by a surprisingly cautious AJ Foyt. Behind him, a number of eager drivers began to get a bit impatient. Holbert was the first to get past and he was followed by the Leon brothers, Thierry Boutsen, the two Jaguars and Hans Stuck. Soon the Valvoline Porsche 962 was down to 10th position, but nobody seemed to be worrying in the Preston Henn Pits. Wollek declared after the race that it was all part of their race tactics, a case of hares and tortoises.

Out front, everybody was trying hard to give their sponsors a good run for their money, seeing that the first hour of the race was being broadcast live on a number of national TV networks. John Paul Jr was best at this little game, managing to keep Van der Merwe's Kreepy Krauly March at bay and he stayed in front until the first series of pit stops, much to the joy of the Buick observers. Buick are extremely active in American motor sport at the moment, and this was just what they were looking for.

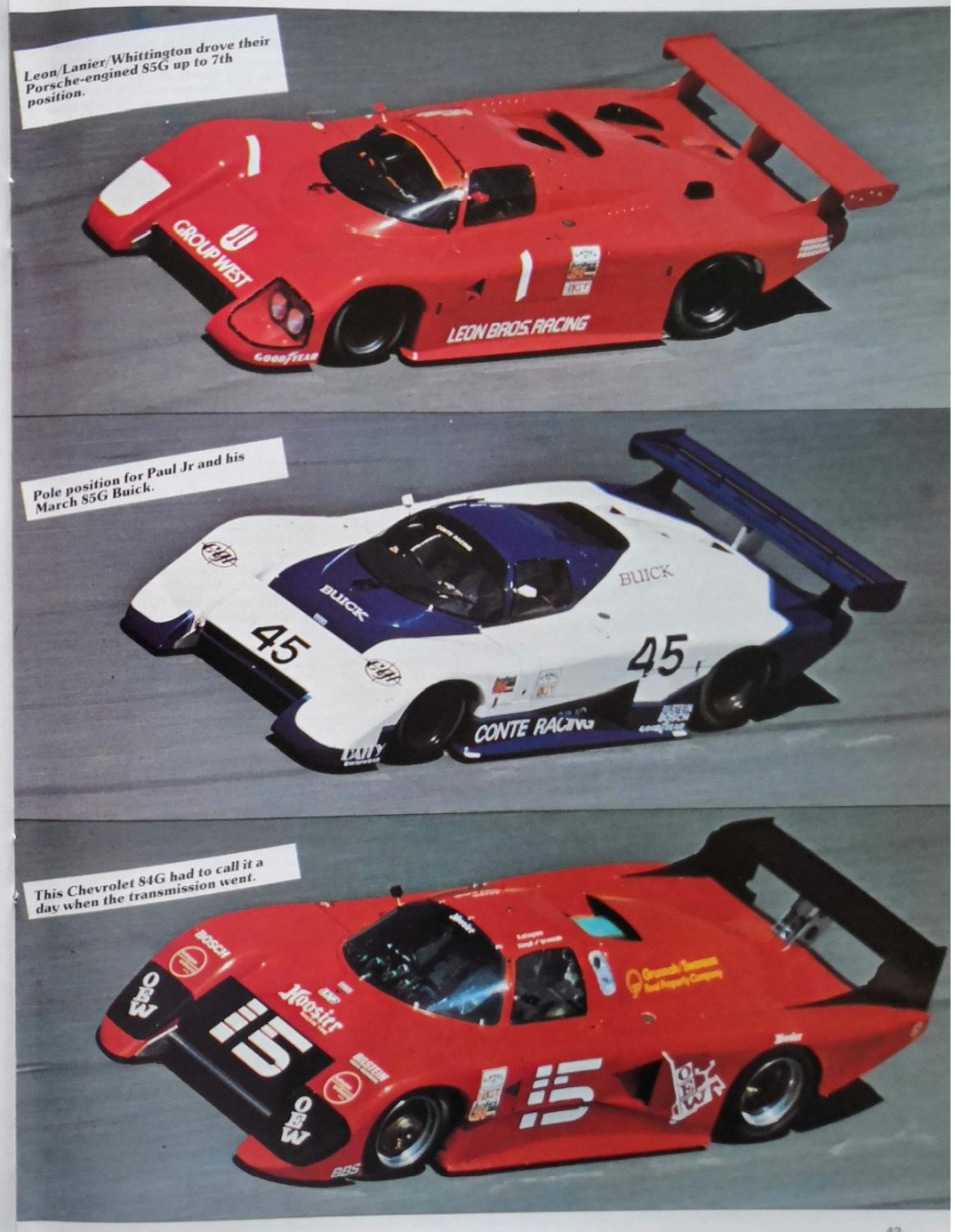
Lap 30 and, despite the number of cars out on the circuit, there had been no incidents to speak of except Al Leon's puncture, which had resulted in a damaged front end, and the Fiero, last on the grid, had stopped at the end of the first lap. As the teams came in for refuelling, snippets of information came through. Last year's winner had paid the price of trying to keep up with John Paul Jr and the South-African March, after running out of petrol out on the circuit, had lost a lot of time, first of all to get back to the pits and, secondly, to leave the pits after the fuel pump had seized. Al Holbert took the lead after John Paul Jr's pit stop whilst the two Jaguars, to avoid having to work on two cars at the same time, staggered their refuelling. Ballot stopped first and Tullius, who had momentarily taken the lead during the 35th and 36th laps after the 962 had stopped, followed him 5 laps later. By this time, all the front runners had stopped... except Super-Tex whose careful driving and relatively low fuel consumption (compared with the Marches and certain Porsches) was already paying dividends. As Wollek came back out onto the circuit, he found himself tailing Bell and just in front of the Conte Racing March-Buick, Redman's Jaguar, the BF Goodrich 962 and Bob Akin's similar car. For the Preston Henn's Swap Shop team, the position of their car made up for the loss of Harald Grohs' 935 special which had retired on lap 16 with engine problems. The same car had won in 1983, was second in 84, and was in with a chance this year, if driven carefully. Co-driver, John Louis Schlesser, had been in bed with the flu and the retirement meant that he needn't bother getting up.

After 10 hours of racing, car No 14 was firmly in command of the race, about 30 seconds in front of the Jaguar No 44, which took the lead as the second round of refuelling stops started. The excitement, however, didn't last for long as news came through that Chip Robinson had punctured and had suffered quite a bit of damage as a result. In all, 5 laps were lost in repairing the damage to the rear right wing, which had been torn off, and to the twisted wing support. It was getting near 6 o'clock in the evening and the weather experts had forecast rain for around that time. They were five minutes out and, indeed, heavy rain had everybody scurrying to the pits to change tyres. The shower lasted only ten minutes and soon everyone was back into the pits to get back onto slicks. Surprisingly, there had been no incidents on the wet track and that tended to reinforce the impression of a fairly eventless race, in contrast to the first hours in previous Daytonas.

Then things started to happen. John Paul was forced to make an unscheduled stop due to rear suspension problems. Soon afterwards. The Miller/Cowart/de Narvaez March-Chevrolet spent a long moment at its pits. The gearbox had jammed and retirement was officially announced a little later.

At 19:05, the pace-car was out on the track, announcing the first major incident of the race. The GTU class leader, a Porsche 924, had hit a wall on the first banked turn. During the quarter of an hour or so that was needed to get the wreck off the track and to clear the debris from the surface, most teams had profited from the delay to refuel. With all that happening, the fact that the Leven/Pescarolo Porsche 962 hadn't left its pits nearly went unnoticed. A timing chain tightener had come loose, the ignition had gone hay-wire and the damage was irreparable. Heads hung low in the Bayside Disposal pits as one of the three principal favourites retired. The GTP Corvette also retired at this stage with transmission problems after an enventless race.

Only a lap after the restart, the pace-car was back on the track. The previous stop had meant that there was a pack of 50 or so cars grouped together, with some of the faster cars at the rear. As soon as the green light was given, these all started to overtake the slower cars.



Leon/Lanier/Whittington drove their Porsche-engined 85G up to 7th position.

Pole position for Paul Jr and his March 85G Buick.

This Chevrolet 84G had to call it a day when the transmission went.

front of the stands, Pete Halsmer's Goodrich 962 got in a tangle with a Corvette. At nearly 190 mph, both cars were sent hurtling from one side of the track to the other, as the following cars did their utmost to avoid them. Nineteen minutes were needed to clear the track this time and, as the two drivers were extracted unhurt from their cars, the crowd cheered and applauded them like stock car heroes. By lap 120, things had begun to calm down and the positions at that moment were Holbert in the lead, on the same lap as the Jaguar No 44. Wollek was a lap behind, Lanier 6th and Ian Schekter 7th. Bob Akin's team's Porsche 935 special, Mass's 962, the Lloyd/Kalagian's and Art Leon's Marches followed, eight laps behind whilst the works Ford Mustang of Bundy/Ribbs/Dallenbeck Jr was up into 10th place.

HOLBERT/BELL/UNSER JR TEAR OFF AHEAD

The strain was beginning to tell. Apart from the Pescarolo/Boutsen car, Stuck/Akin/Miller and Paul/Adam/Ganz had disappeared from the leader board. They spent a great deal of time changing the CV joint on the March Buick and the Coca Cola's front cover had flown off somewhere out on the track. Hans Stuck, driving the Porsche, didn't seem to have much chance left of winning. As night fell, more and more cars came limping back to the pits with various ailments. The South Africans, Schekter/Van der Merwe/Martin, drove along pit lane quite a number of times with problems concerning the front spoiler or the damaged rear cover. At 1:45 am, enough was enough, and they decided to call it a day. The organisers had been particularly generous in allowing them to continue racing at all — the March No 10 was almost devoid of its bodywork! Preston Henn asked Thierry Boutsen to make up a foursome on the No 8 at about 9 am. Two of his three drivers were sick and the third, was discovering the joys of circuit and Endurance racing for the first time at the ripe old age of 45!

At that stage of the race, Porsche was free of its Jaguar rivals, only one of the two JR5s were still in. March too, were out of contention for the title and Porsche was safe with three 962s lying in the first four positions. Only the first three cars were on the same lap (Bell/Tullius/Wollek); whilst Wollek was already conceding 11 laps, the equivalent of a quarter of an hour. No-one could say for sure which teams would win their respective classes, with the exception of the Mustang GTO which had flown off with an easy lead from the start. By that point in time, the Mazda had replaced the Porsche leader in the GTU class, with the official Toyota prepared by Dan Gurney in second place.

An hour later, the Jaguars bowed out one after the other. The Ballot Lena/Robinson/Adams Jag was the first to go when the oil pressure suddenly dropped to zero for some strange reason, which the mechanics couldn't remedy. While they were busy scratching their heads, the loud-speaker announced that the No 44 XJR 5 was in flames at the chicane. The rear tyre had blown, tearing off an oil line in the process and a fire broke out. The marshals were quick to intervene and in thirty seconds, the blaze was out. Bob Tullius, though, spent a horrific moment. The bodywork began to curl up from the heat and he couldn't open the door. The fumes were pouring in and he really believed that he was going to suffocate. He threw off his helmet so that he could stick his head out through the little side window. He also tore of his gloves to act faster. He was lucky in that he only suffered minor burns to his hands, which be almost certainly wouldn't have done, had he kept his gloves on. The burning car was shown live on television, and judging by the size of the flames, Tullius definitely had a lucky escape. The pace car was sent out again. Bell/Holbert/Unser were a good three laps ahead of the 962 No 8 which was being driven by Foyt.

The pace car driver was never idle for long. At 0:10, he was out once more. This time, a Porsche 934 had broken down and was stranded on the banking. The Americans didn't seem to mind having the race continually stopped and restarted. They enjoyed the excitement of watching the tightly bunched cars as they tore off once the green light went on. The turbos didn't react well to the treatment and Thierry Boutsen, now in the Porsche, went roaring back to the pits with his turbo stuck at maximum boost pressure! The waste gate was repaired within fifteen minutes and it was just after 1 am. Just how many cars were going to come limping back! The Lowenbrau Porsche 962 had built up a comfortable cushion of 11 laps. But, was the leading Porsche going to last the race without encountering some kind of problem? If it didn't, that would mean that Sunday's racing was going to be a dull affair.

After ten hours, the leader board read as follows, Holbert/Bell/Unser Jr, 11

Team by team

PORSCHE

There were no interesting modifications. All existing 962s were entered, apart from Fitzpatrick's. Al Holbert's car featured a short 956-type rear cover — a great advantage on certain circuits like Watkins Glen, according to Derek Bell, where up to 2s per lap can be gained —but not for Daytona. The chassis were allocated as follows — Bayside No 86, 101; Coca Cola, 102; Lowenbrau, 103; Preston Henn, 104; Goodrich No 67, 106; Goodrich No 68, 108; Bayside No 88, 109. Engine sizes varied from 3.2 litres on Holbert and Akin's cars to 2.8 litres on Wollek and Pescarolo's. Tyres: Goodrich on Nos 67 and 68, Bridgestone for the Bruce Leven team and Goodyear for the others.

MARCH

All cars which had been sold since 1982 were present — the old ex-Garretson 82 G (which did not take part in qualifying), the Red Lobster (chassis No 3) 83 G, whose rear wing was no longer the original. Most of the Marches racing were in fact 84 Gs featuring either Porsche (Kreepy Krauly), Buick or Chevrolet (Leon Brothers, de Atley, Lloyd) engines. The stars of the paddock were the 85 Gs, raced by three teams. The Leon Brothers had fitted a 3.2-litre Porsche block, prepared by Andial, whilst Conte Racing and Ralph Sanchez opted for a 3.4-litre supercharged V6 Buick.

JAGUAR

Despite the many modifications, the Jaguars resembled last year's version. Everything had been revised from the cockpit to the exhausts, the most important change being the redesigned rear suspension. The engine now produces an extra 30 bhp and the car has lost 50 kilos. Larger brakes are featured and ground effect has been improved. There is a large air inlet placed centrally on the rear cover, replacing the three small NACAs on last year's version. Although these changes were not easily visible to the spectator, the drivers are confident that they have gained up to 2 seconds a lap over last year.

ARGO

Five cars were entered of which one under the name of Royale. A row between the two firms has been taking place for the past year, since one of the main project leaders quit one constructor to join the other. Two of these somewhat compact GTPs were powered by Ford engines, two by Mazdas and one by Buick, and they were nearly all entered for the Camel Light class. Jim Downing — 9th in 1984 — has made quite a few important modifications on his car — for example he has repositioned the cooling system towards the front, instead of laterally.

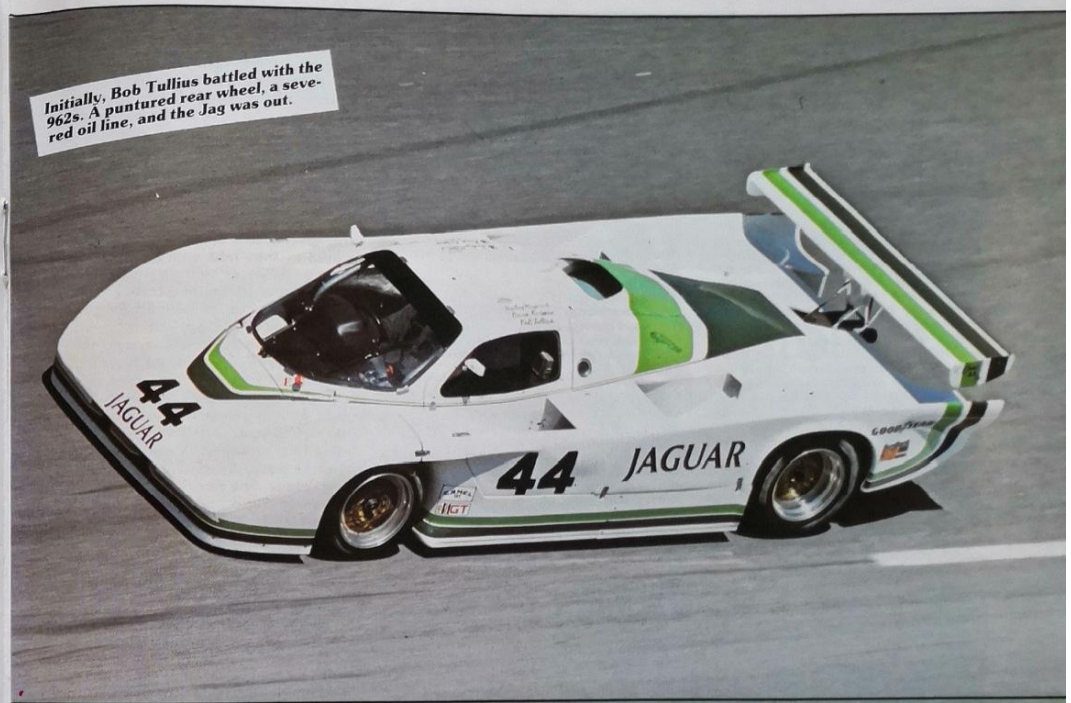
MOMO ALBA

This was an entirely new car, the front part was lengthened and a short rear cover mounted and the car bears little resemblance to Facetti's Alba. A 3.3-litre Cosworth is featured. Larger brakes have also been fitted. Jim Trueman, Moretti's co-driver at Daytona and Miami, has placed an order for a similar car. Momo still is not sure of his plans for the rest of the season. His car is shortly going to be bought by a team wishing to race in the Camel Light class with a 3-litre Cosworth.

TIGA

There was an identical car to the one used by Roy Baker in the world championship. It was powered by a Mazda 13B.

There were less Camaros, Corvettes and Firebirds in view of the fact that there were many more GTPs.



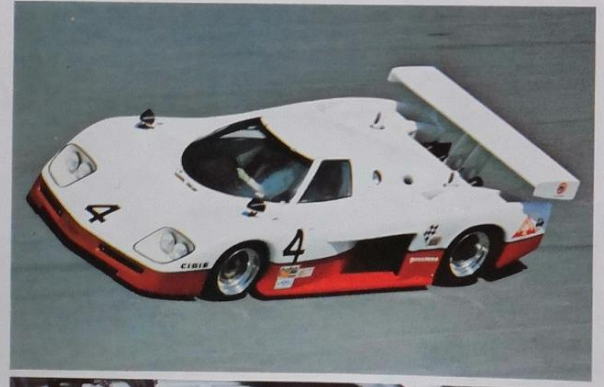
Initially, Bob Tullius battled with the 962s. A punctured rear wheel, a severed oil line, and the Jag was out.

The triumphant GTO Ford Mustang.

Lola Corvette GTP

As the opening round to the IMSA championship, the Daytona 24 Hours invariably gives the chance to discover what's new. For 1985, one of the star attractions from this point of view must certainly be the Lola T710 Corvette.
The Lola Corvette was unveiled at the 1983 Detroit Grand Prix and little was heard of it since. Private testing had been carried out at Silverstone and in California but there was no mention whatsoever of plans for its maiden race. In the end the debut was fixed for the 1985 Daytona 24 Hours after Lee Racing had bought a rolling chassis in December 1984. The rolling chassis, bought by Lee Price for $140,000, has not been fitted with the Ryan Falconner Chevrolet turbo engine and, instead, a similar 5.7-litre V8 engine (steel block, aluminium cylinder head) was decided upon. Power is said to be 550 bhp. Two rolling chassis had been built and the other one is at GM's Detroit factory for development purposes. Price insists on the fact that his car is a works car. The GTP Corvette was entirely conceived by GM engineers even if the construction work was carried out by Lola. After all, claims Price, the GTP Mustang was developed by Zakspeed and not Ford. According to Price, he had ordered the chassis as early as July 1983 after a careful study of what else was available. He has now joined up with Billy Hagan, the man who brought two Camaros over to Le Mans in 1983, and plans have been made to try and get the new Corvette over to the French race this year if the necessary $200,000 can be found. The car was tested at the Daytona circuit during the week preceding the race where it met with an accident after the rear wing pylon snapped.

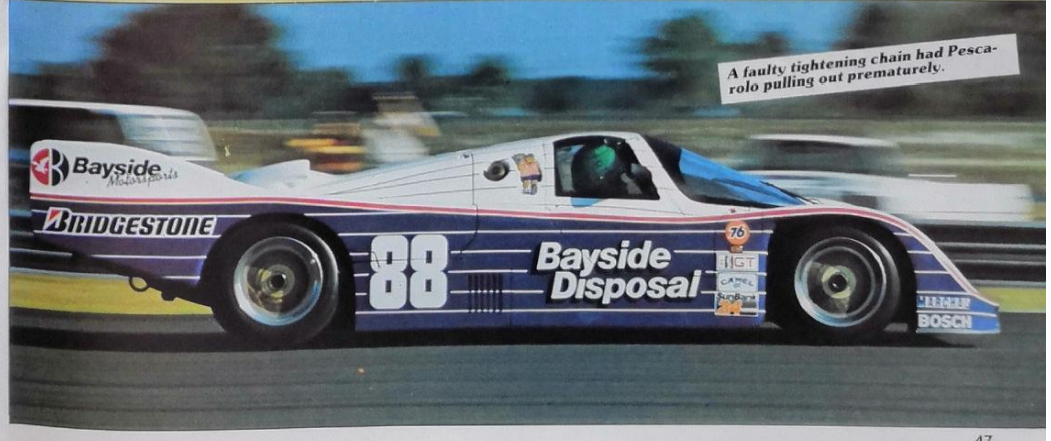
Specifications
Chassis: Kevlar monocoque with aluminium honeycomb panels.
Dimensions: Length: 4m 77.
Width: 2m 00.
Height: 1m 04.
Wheelbase: 2m 70.
Front overhang: 1m 01.
Rear overhang: 1m 05.
Fuel tank capacity: 120 litres.
Transmission: 5-speed manual Hewland gearbox.
Wheels: Front - 11 x 16; Rear - 14 x 16.
Tyres: Firestone. Front - 23.5 x 11 x 16; Rear - 27 x 14 x 16.
Lee Price's reason for choosing to fit Firestones was to give the tyre manufacturer the chance of making a comeback to motor racing too. A brief glance at the data sheet for the Corvette GTP shows that the standard dimensions have been modified. Wheelbase, length, width and height are all different. The usual wheelbase on the Corvette production model is 2m 44, for example.



laps ahead of the Wollek/Foyt/ Boutsen/Unser Sr foursome, then Busby/Knoop and Mass, back up with the Valvoline. The Muller/McIntyre/Nierop Porsche was a good 18 laps behind (!), the March Porsche driven by Al Leon/Lanier/Wittington, 19, and brother Art Leon's Chevrolet-engined March was conceding 22 laps, just two laps ahead of the Ribbs/Dallenbach/Bundy Mustang and 4 ahead of Stuck/Akin/Miller's 962 — still busy leaving front covers lying around. The mechanics were beginning to wonder if they were ever going to stop — they had only brought four replacement ones with them and they were already on the third one !
The positions hardly varied during the early hours of Sunday morning and dawn slowly broke over Daytona with the track drying out after a short shower. The cars were back on slicks. Knoop, lying firm in third at that point, made a pit stop which caused a slight drama. The brakes on the No 67 weren't doing their job efficiently and the lengthy repairs sent the GTP Porsche down to 6th place. The new 3rd-position car was conceding 35 laps to the leaders, which didn't help to make the race anymore exciting. Understandably, Al Holbert/Derek Bell/Al Unser Jr, didn't rush their fuel stops. The drivers complained that the engine was misfiring and the mechanics traced the problem to a blocked fuel filter. The leaders were so far ahead that they even stopped to change the front cover after grazing the chicane. Bar incidents, the title, it seemed, would be theirs.
Nothing occurred until 09:19 when the 962 drove back to the pits at a snail's pace. The fuel filter needed another clean, and they were set back 4 laps. In second position, however, Bob Wollek and Thierry Boutsen were slowly but surely gaining on the leaders. They didn't have much hope of winning but then, who can predict anything in motor sport! Anyway, the No 14 Porsche showed that it still meant business and won back some of the lost terrain. There was a small race-within-the-race taking place between the cars lying 3rd, 4th and 5th, all on the same lap. Stuck/Akin/Miller demolished their fourth front cover and another was lent by Bayside ! Then, at 10:30, it started raining again so, it was all-change back at the pits. Meanwhile, the leading car's lap times were increasingly slower, with the No 8 gaining 10s per lap on the No 14. Tension was high in the pits, (the two teams were neighbours) and the spectators suddenly took a greater interest in the race. On lap 600, things started hotting up in a big way. The gap was narrowing steadily as the No 8 put in 11 laps for every 10 of the leaders. By 14:00, Boutsen was only conceding 4 laps to Holbert who was unable to put up some kind of a defense. Al was having a hard time trying to edge past the old 935s and was being overtaken by the remaining GTPs. He made a 3m-pit stop to try and remedy the electric problem and changed the ignition casing, but to no avail. Bell took over at the wheel. He knew there wasn't much hope left.

Pete Halmser and his 962 bowed out in true stock car style.

Holbert/Bell/Unser Jr were pipped to the post during the final hour.



A faulty tightening chain had Pescarolo pulling out prematurely.

Preston Henn's 962 had taken command of the race at 14:48, having got past Derek Bell in serious trouble, his car refusing to fire up. The final victory had slipped through his fingers — it was too late to do anything now. The chequered flag was going to be waved in thirty minutes. Jochen Mass felt that 2nd place was going to be his, but that was without reckoning with Derek Bell who finally got the engine going. He waited close to the finish line and pipped Mass to 2nd place as the flag came down. In 60 minutes, Bell had only completed 7 laps, but seeing that he had a 30m cushion on the BF Goodrich 962, all he had to do was lie in wait. Hans Stuck just made it home in 4th position ahead of the Coca Cola 962. The Moby Dick-style 935 was next over the line, but two laps behind its stable mate.
Porsche were the uncontested victors at the Daytona 24 Hours, finishing in the first five positions. The Leon Brothers' two Marches then followed and in 8th position, came the Mustang of Ribbs/Dallenbach/Bundy and winners of the GTO class, just ahead of a 935. The Argo Mazda finished for the second year running in 10th place. The Japanese constructor also won the GTU class with the RX 7 driven by the Porto Rican driver, Diego Febles, 11th overall.
It's worth noting that a Ferrari 512 BB finished 16th, in front of an Argo Buick which spent the second half of the race with a bare behind ! Preston Henn can now add this victory to his record which boasts a 2nd place at Le Mans and at Daytona, a 3rd place at the IMSA Finale and at Sebring and a 4th place at Miami. An impressive string of results for 1984 ! Not forgetting a victory at the 1983 edition of the Daytona 24 Hours.
Preston Henn's outfit has proved that it is a team to be reckoned with. All they need now is a victory at Le Mans. Henn is going to do everything in his power to do just that. Foyt has made no secret of the fact that he would like to be among his first drivers to claim that win. To date, he is the only person to have won at Indy (4 times), at the Daytona 500 Miles and at the Le Mans and Daytona 24 Hours. Not bad! Al Unser Sr must also be congratulated for giving up his drive to Thierry Boutsen. The veteran quickly realised that he wasn't up to playing the game and the Belgian driver put in some great driving for a team to which he didn't originally belong. Wollek forgot that he was ill once he'd made it over the finish line. Just what the doctor ordered — nothing like the taste of victory to cure an illness ! It was all the more refreshing in that 1984 hadn't been a particularly fruitful season. It's on to Miami, the next championship round, for a 3-hour tussle. Jaguar and March both have good chances of carrying off the crown, but with five or six 962s on the grid, they, and everyone else, are going to have to put up a strong fight.

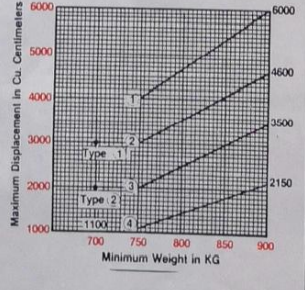
IMSA 1985 — Simplified regulations

There are four different classes within the Camel GT IMSA championship. The four traditional GTP (Group C-FIA), GTX (ex-group 5 from 1976-81), GTO and GTU (Groups 4 or B in Europe) classes, have now become five, with the addition this year of GT Light for GTPs weighing in at a minimum of 700 kilos and with a maximum engine size of 3 litres. Compared with the 1984 rules and regulations, the engine size for GTO and GTU has been increased to 3 litres, compared with 2.8 litres last season. Otherwise, the rules are identical.

Fuel tank capacities : GTU - 110 litres. GTO, GTX and GTP or GT Light - 120 litres.

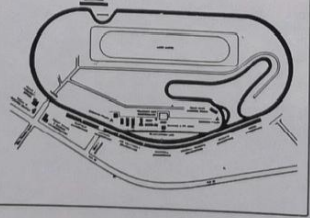
Engine Eligibility
IMSA will regulate the eligibility of engines for use in GTP cars. Eligible engines may derive from these origins :

Type 1 — Volume-produced 2-valve conventional engines and rotary engines.
Type 2 — Racing engines and volume-produced 4-valve conventional engines.
Type 3 — Supercharged Type 1 engines. (Restricted to single turbo and single ignition.)
Type 4 — Supercharged Type 2 engines.



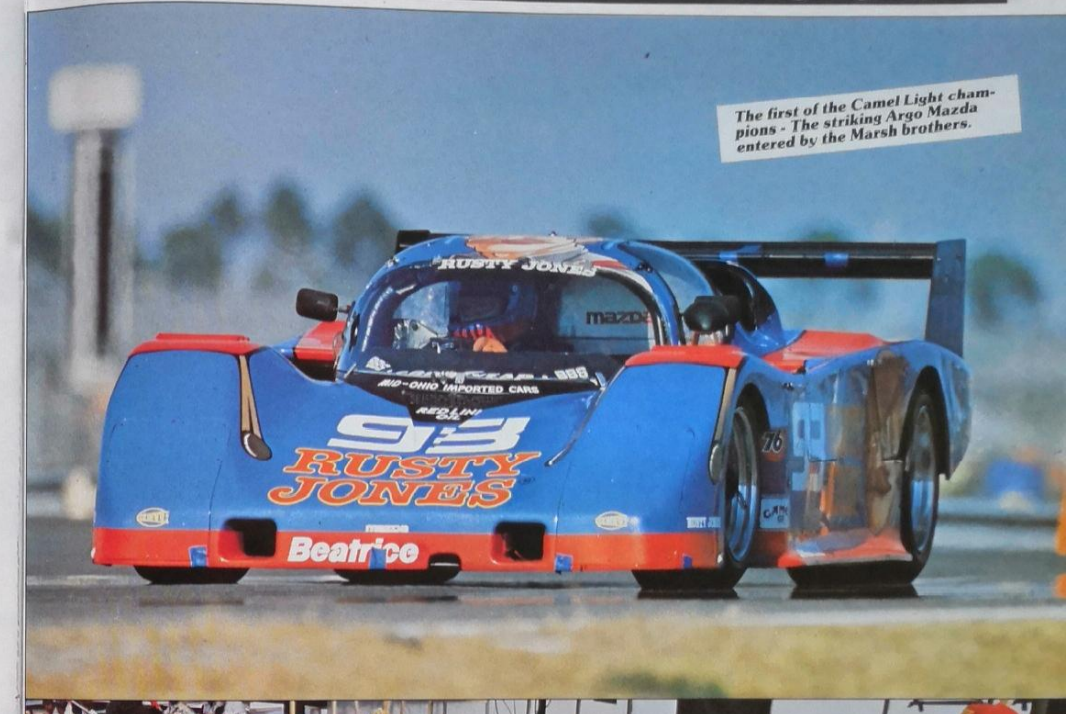
The new track

The new track was inaugurated last December for the IMSA Finale. The road circuit has been shortened from 6.199 km/3.87 miles to 4.728 km/3.58 miles. For security reasons, the whole of the track leading off after the pits was revised. Previously, a driver would leave the pits and go out on the track via a very tight left-hand curve, parallel to the actual circuit, to rejoin the race in the middle of the first infield straight. This became dangerous when a competitor was about to overtake just at that particular point, ie, when a car was about to come back out onto the track. Now, the first bend is much wider and is preceded by a left-right chicane, which has been designed to send the cars to the side opposite the entry lane. The straight which follows has been made approximately 300 yards shorter before Turn 2, a right hairpin named Ricardo Rodriguez Corner. As a result of the work carried out, the road portion has been made shorter compared with the banking — something the local competitors particularly appreciate. The chicane that was added in 1984 at the opposite end of the circuit has not been taken out.

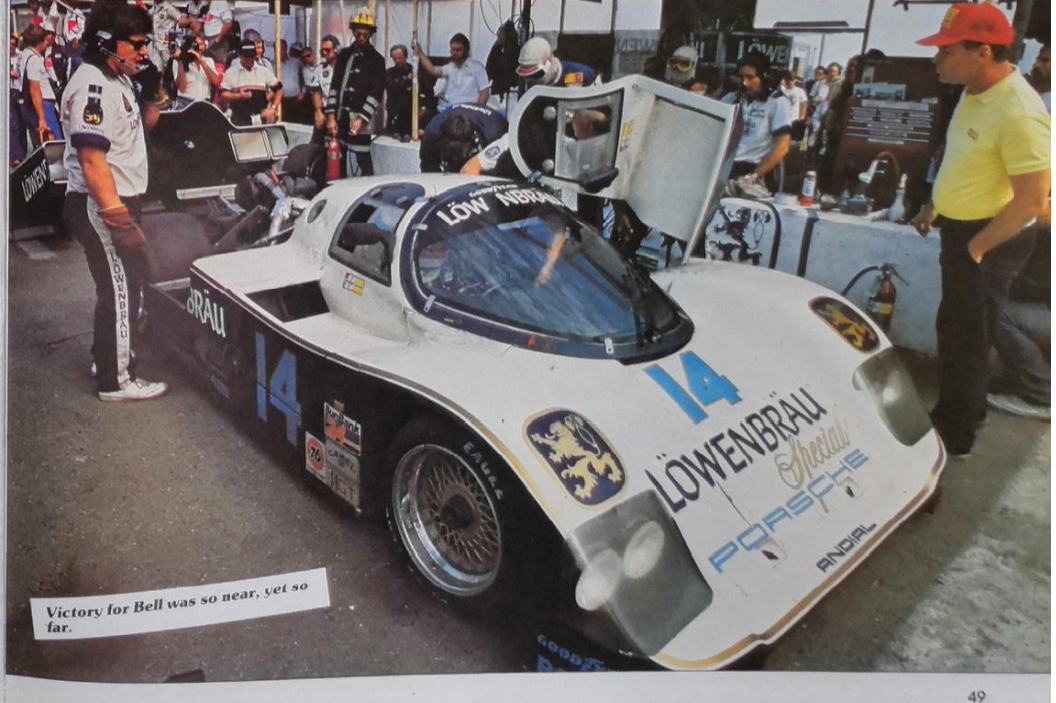


The speedway gossip column

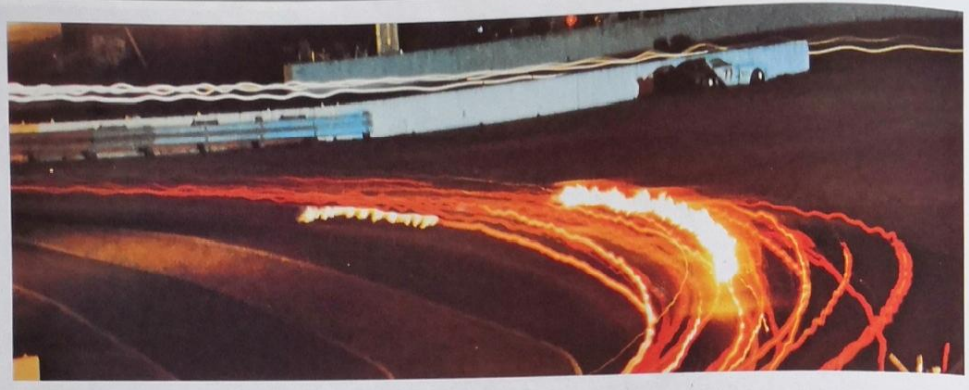
The reason why Walter Brun was with Preston Henn is simple. The Pomano Beach dweller swapped his entry over for a drive in a 956 at Le Mans.
Preston Henn will enter another car for the Le Mans 24 Hours — either Fitzpatrick's 956/962 or his own 962. He hopes that the first solution will work out — avoiding the costly travelling expenses. More and more American and European teams are exchanging equipment. BF Goodrich are looking to hire the necessary equipment and assistance for Le Mans. They are against taking over the two 962s as the Mid Ohio round takes place just the week before. Brun too, is hoping to swell the ranks — but has he got the cars to be everywhere at once?
Reinhold Joest was present, as every year, and was pleased to announce that Blaupunkt have signed to back the German for another year in his home championship. He didn't appreciate the rumours that were spread by German-Swiss journalists, announcing that Jochen Mass and his sponsor were joining Walter Brun's team — a German-Swiss, in case you forgot.
Tullius and Walkinshaw are not on what you'd call the best of terms. The quickest way of annoying the "Group 44" boss is to ask after his British counterpart.
The person behind the Ferrari 512 BB entry was none other than Don Walker, the organiser of last year's Dallas GP. In spite of changing the engine after qualifying to fit a second one for the race, his car was forced to retire.
The February temperature record was broken during the two practice days. It was the first time since 1957 that it had been so warm — 30 - 32°! The record of the coldest temperature had been recorded only two weeks previously.
It is possible that Claude Ballot Lena and Henri Pescarolo might team up to drive one of Bruce Leven's two 962s at the Miami round.



The first of the Camel Light champions - The striking Argo Mazda entered by the Marsh brothers.



Victory for Bell was so near, yet so far.



STARTING GRID

No 45. Paul Jr/Adam/Ganz
March 85 G Buick
1m 41.490s

No 8. Wollek/Foyt/Unser Sr
Porsche 962
1m 43.588s

No 5. Stuck/Akin/Miller
Porsche 962
1m 45.471s

* No 88. Leven/Pescarolo/Boutsen
Porsche 962
1m 46.133s

No 44. Tullius/Redman/Haywood
Jaguar XJR 5
1m 47.003s

No 04. Ballot Lena/Adams/Robinson
Jaguar XJR 5
1m 48.038s

No 67. Mass/Busby/Knoop
Porsche 962
1m 48.475s

No 2. Art Leon/McKitterick/Wolters
March 84 G Chevrolet
1m 49.203s

No 61. Courtney/O'Neill/Shelton
Argo Ford
1m 49.777s

No 30. Moretti/Trueman/Sigala
Alba Ford
1m 50.637s

No 7. Mullen/McIntyre/Nierop
Porsche 935
1m 50.843s

No 16. Schlesser/Brun/Grohs
Porsche 935
1m 52.053s

No 97. Glick/Scyphers/Cooper
Chevrolet Corvette
1m 53.929s

No 90. Delano/Petery/Riggins
Pontiac Firebird
1m 54.383s

No 9. Baker/Newsum/Mead
Porsche 935
1m 54.805s

* No 19. Miller/Ramirez/Redding
Nimrod Aston Martin
1m 56.950s

* No 64. Sata/Rodriguez
Chevrolet Corvette
1m 59.170s

No 28. Baker/MacCall/Ruttman
Chevrolet Corvette
2m 00.128s

No 95. Van Every/Tisdelle
Porsche 930 Turbo
2m 00.364s

No 72. Shafer/Nehl/Painter
Chevrolet Camaro
2m 00. 947s

* No. 05. Almeida/Morejon/Riano
Porsche 935
2m 01.112s

No 0. Van der Merwe/Schekter/Martin
March 84 G Porsche
1m 43.208s

No 14. Holbert/Bell/Unser Jr
Porsche 962
1m 44.739s

No 1. Al Leon/Lanier/Bill Whittington
March 85 G Porsche
1m 45.584s

No 86. Boutsen/Pescarolo/Leven
Porsche 962
1m 46.382s

No 15. Kalagian/Lloyd/Grunnah
March 84 G Chevrolet
1m 47.773s

No 29. Byrne/Brassfield/Roe
March 84 G Chevrolet
1m 48.290s

No 4. Labonte/Baird/Price/Hagan
Lola T 710 Corvette
1m 48.756s

No 68. Halsmer/Morton/Quester
Porsche 962
1m 49.607s

No 25. Cowart/Miller/de Narvaez
March 83 G Chevrolet
1m 50.041s

No 3. Madren/Pickering/Allison
March 84 G Buick
1m 50.733s

No 07. St James/Coconis/Lang
Argo Ford
1m 51.116s

No 06. Jones/Miller/Bauer
Ford Mustang
1m 52.427s

No 65. Ribbs/Dallenbach Jr/Bundy
Ford Mustang
1m 54.209s

No 6. Morgan/Miller/Alsup
Argo Buick
1m 54.563s

No 11. Kendall/Hotchkiss/Fitzgerald
Porsche 935
1m 56.654s

No 80. Lindley/Bonnet/St Larence
Chevrolet Camaro
1m 57.886s

No 89. Jamsal/Galdamez/Anvagua
Porsche 934
1m 59.405s

No 51. McComb/Mancuso/Fiala
Ferrari 512 BB
2m 00.362s

No 21. Gelles/Cohen/Walker
Ferrari 512 BB
2m 00.571s

No 96. Moffat/Hansford/McCloud
Mazda RX 7
2m 01.030s

No 58. Borlase/Kravig/Torres
Porsche 934
2m 01.158s

No 41. Sereia/Noseda
Pontiac Firebird
2m 01.447s

No 20. Baker/Silver/Herman
Porsche 935
2m 02.349s

No 33. Anderson/Boand/Brummer
Lola T 600 Chevrolet
2m 02.499s

No 54. Heinz/Barnett/Thompson
Chevrolet Corvette
2m 03.807s

No 42. Lewis/Pruett/Ware
Mazda RX 7
2m 04.487s

No 37. Burdsall/Welter/Nicholson
Pontiac Firebird
2m 05.282s

No 22. Taylor/Hayes/Taylor
Pontiac Firebird
2m 05.610s

No 78. Garcia/Matienzo
Pontiac Firebird
2m 05.984s

No 08. Romano/Potter/Olson
Mazda RX 7
2m 07.933s

No 31. Goral/Gralia/Donaldson
Porsche 930 Turbo
2m 08.057s

No 92. Prego/Gennone/Overbogh
Chevrolet Camaro
2m 08.676s

No 13. Rubino/Wagoner/Knott
Mazda RX 7
2m 08.830s

No 77. Petrick/Wallace
Mazda RX 7
2m 09.514s

No 55. Peters/Schwarz/Schwarz
Mazda RX 7
2m 09.952s

No 60. Swan/Dietrich/Ruth/Brockman
Mazda RX 7
2m 10.424s

No 74. Gentilozzi/Akin/Godsey
Porsche 924 Carrera
2m 11.226s

No 43. Schmidt/Schmidt/Arkins
Chevrolet Corvette
2m 11.452s

* No 79. Winters/Bergstrom/Casey
Porsche 924 Carrera
No time

No 63. Downing/Maffucci/Katayama
Argo Mazda
No starters

No 93. Marsh/Pawley/Marsh
Argo Mazda
2m 01.600s

No 83. Schneider/Farbes
Robinson/Istook
Chevrolet Corvette
2m 02.389s

No 70. Cummings/Walker/Rubright
Chevrolet Corvette
2m 02.951s

No 76. Baldwin/Young/Kline
Mazda RX7
2m 04.295s

No 99. Card/Aase
Toyota Celica
2m 05.187s

No 53. Smith/Waugh/Febles
Mazda RX 7
2m 05.511s

No 71. Johnson/Dunham/Terada
Mazda RX 7
2m 05.828s

No 73. Howey/Kock/Wolf
Chevrolet Camaro
2m 07.136s

No 38. Mandeville/Blackburn/Yorino
Mazda RX 7
2m 07.951s

No 35. Speer/Hefner/Griffin
Porsche 911
2m 08.675sd

No 09. Schaefer/Uria/Reffening
Figaro/Tilton
Porsche Carrera
2m 08.738s

No 17. Bacon/Guest
Mazda RX 7
2m 09.009s

No 57. Zwiren-Allison-Pio Costa
Mazda RX 7
2m 09.557s

* No 24. Kreider/Newsome
Chevrolet Camaro
2m 10.150s

No 81. Alderman/Hill/Alexander
Ferrari 308 GTB
2m 11.065s

No 94. Wintree/Phalp/Hopkins
Porsche 911
2m 11.245s

No 49. Naon/Garcia/Vitolo
Porsche 911
2m 11.612s

No 47. Dingman/Bohren/Bouchard
Pontiac Firebird
No time

No 84. Young-Speed-Crables
Pontiac Fiero
No time

* Non starters

DAYTONA 24 HOURS 1985

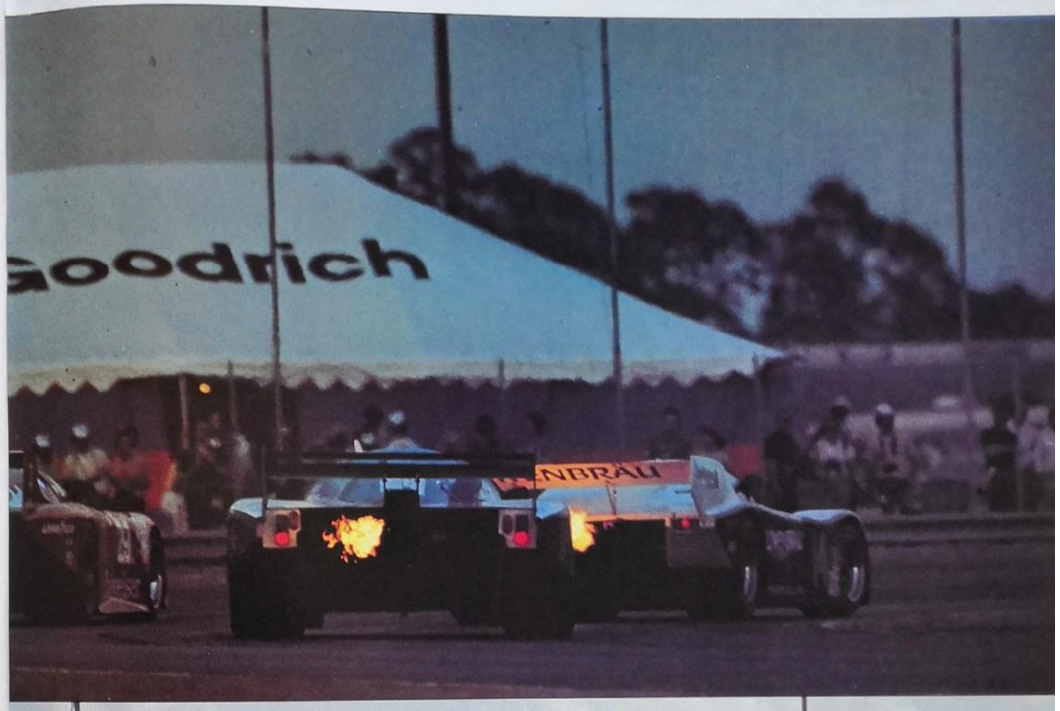
Round 1 of International Motor Sports Association (IMSA) 1985 Championship.
Track length: 5.728 km/3.58 miles.
Weather conditions: Fine for qualifying and during the first few hours of the race, followed by clouds and intermittent showers.
Attendance: 50,000 - 60,000.
Starters: 76; Classified: 30; Retirements: 46.

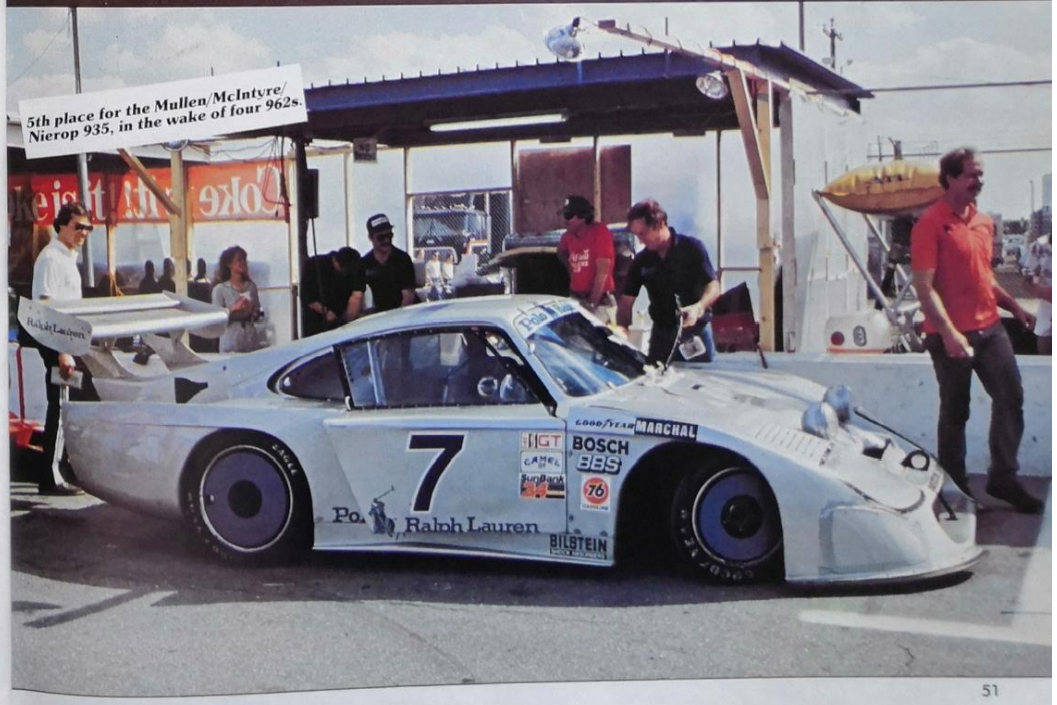
RACE LEADERS

Laps 1-2: John Paul Jr (March Buick)
Lap 3: Van der Merwe (March Porsche)
Laps 4-29: John Paul Jr (March Buick)
Lap 30: Al Holbert (Porsche 962)
Laps 31-34: Hans Stuck (Porsche 962)
Laps 35-36: Tullius (Jaguar XJR 5)
Laps 37-64: Al Holbert (Porsche 962)
Laps 65-74: Tullius (Jaguar XJR 5)
Laps 75-84: Al Holbert (Porsche 962)
Laps 85-106: Bob Tullius (Jaguar XJR 5)
Laps 107-680: Al Holbert (Porsche 962)
Laps 681-703 (finish): Bob Wollek (Porsche 962)

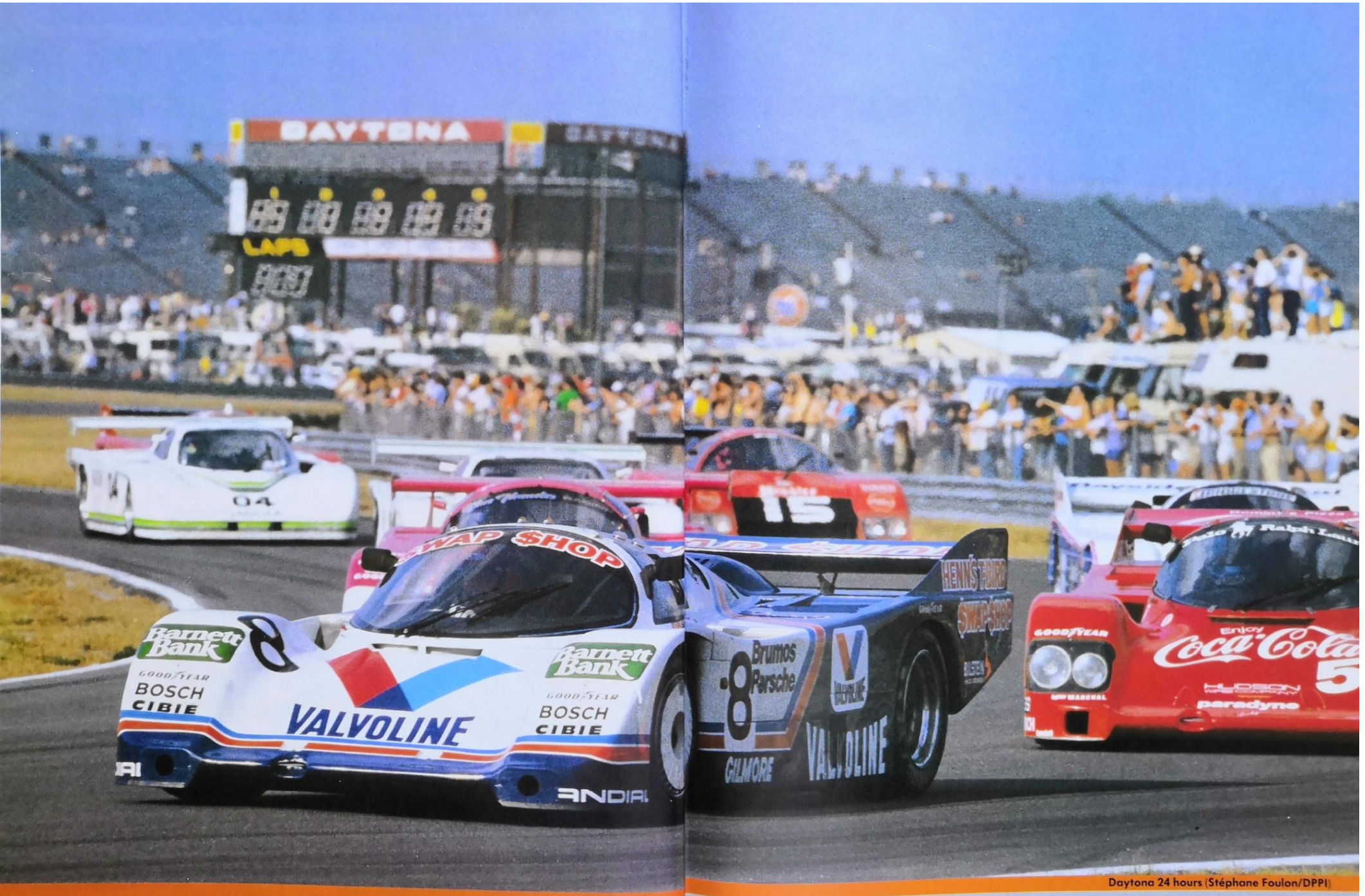
RESULTS

1. Wollek/Boutsen/Foyt/Unser Sr (Porsche 962), 703 laps or 4,026.78 km/2,516.7 miles in 24 hours 01m 36s at an average speed of 167,59 kph/104.7 mph. 2. Holbert/Bell/Unser Jr (Porsche 962), 17 laps. 3. Busby/Knoop/Mass (Porsche 962), 29 laps. 4. Akin/Stuck/Miller (Porsche 962), 33 laps. 5. Mullen/McIntyre/Nierop (Porsche 935), 35 laps. 6. Leon/McKitterick/Wolters (March Chevrolet), 49 laps. 7. Leon/Lanier/Whittington (March Porsche), 51 laps. **8. 1st GTU - Ribbs/Dallenbach Jr/Bundy (Ford Mustang).** 9. Baker/Newsum/Mead (Porsche 935), 79 laps. **10. 1st Camel Light - Marsh/Pawley/Marsh (Argo Mazda), 81 laps.** 11. Smith/Waugh/Febles (Mazda RX 7), 87 laps. 13. Downing/Maffucci/Katayama (Argo Mazda), 84 laps. 14. Schaefer/Uria/Reffenig/Figaro/Tilton (Porsche Carrera), 97 laps. 15. Delano/Petery/Riggins (Pontiac Firebird), 125 laps. 16. Gelles/Cohen/Walker (Ferrari 512 BB), 136 laps. 17. Morgan/Miller/Alsup (Argo Buick), 139 laps. 18. Lewis/Pruett/Varde (Mazda RX 7), 145 laps. 19. Cord/Aase (Toyota Celica), 170 laps. 20. Prego/Gennone/Overbagh (Chevrolet Camaro), 187 laps. 21. Burdsall/Welter/Nicholson (Tiga Mazda), 202 laps. 22. Moffat/Hansford/McCloud (Mazda RX 7), 221 laps. 23. Winfree/Phalp/Hopkins (Porsche 911), 226 laps. 24. Howey/Wolf/Kock (Chevrolet Camaro), 236 laps. 25. Garcia/Matienzo (Pontiac Firebird), 249 laps. 26. Keck/Wessel/Whitaker (Chevrolet Corvette), 267 laps. 27. Schmidt/Schmidt/Atkins (Chevrolet Corvette), 290 laps. 28. Taylor/Haynes/Taylor (Pontiac Firebird), 353 laps. 29. Naon/Garcia/Vitolo/Gonzales (Porsche 911), 367 laps. 30. Goral/Gralia/Donaldson (Porsche 930 Turbo), 530 laps.



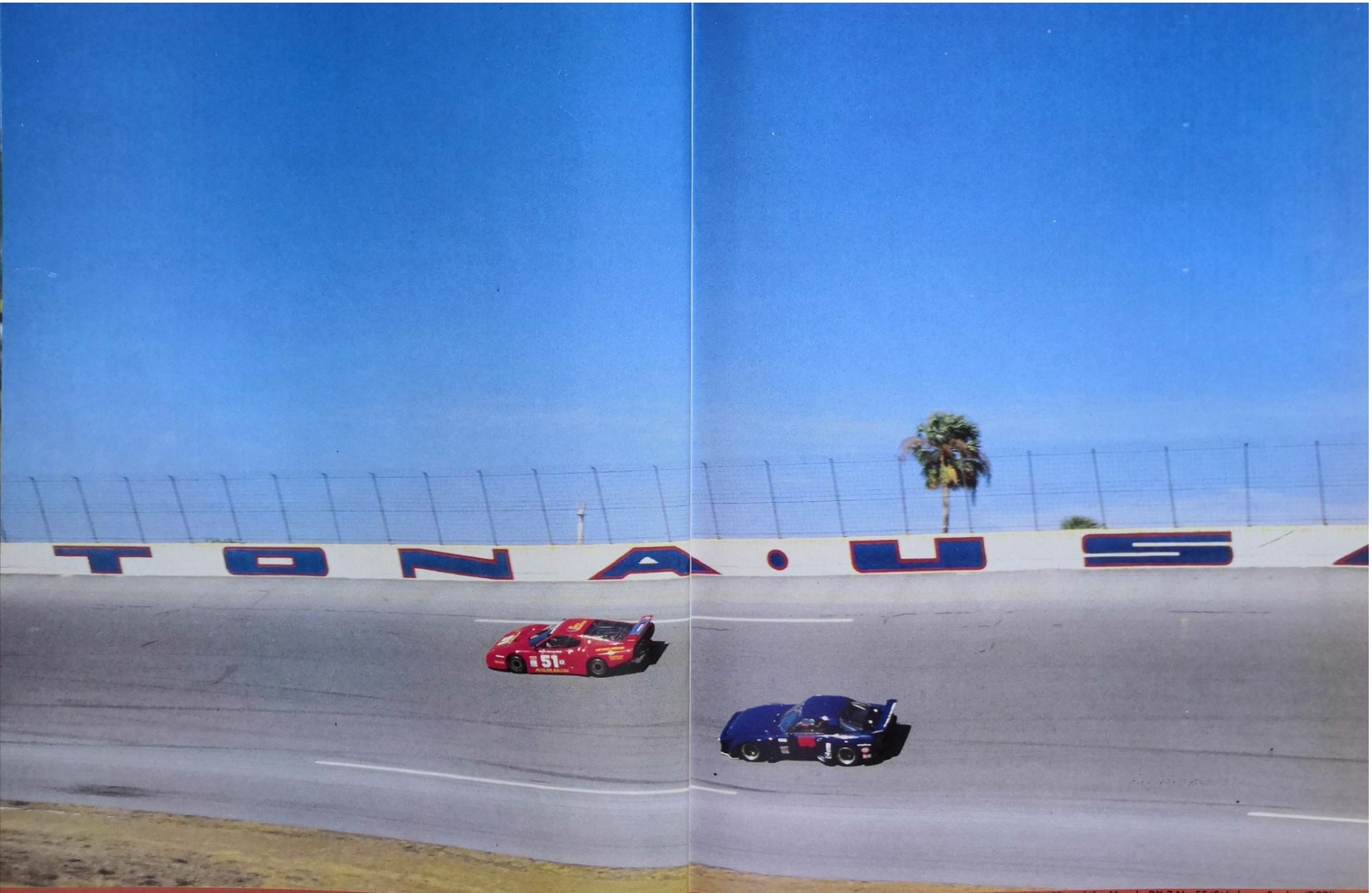


5th place for the Mullen/McIntyre/Nierop 935, in the wake of four 962s.



Daytona 24 hours (Stéphane Foulon/DPPI)

THE VALVOLINE PORSCHE OUT AHEAD OF THE PACK WITH BOB AKIN MOTOR RACING'S 962 IN PURSUIT



Ferrari 512 BB No 51 and the Mazda RX 7 No 55 (Stéphane Foulon/DPPI)

BLUE SKY ABOVE AND A PALM TREE. THE ONLY SPECTATOR TO THE FERRARI AND THE MAZDA AS THEY RACE BY

Mandeville Auto Tech Mazda RX 7 (Autopresse)

76 STARTERS AND ONLY 30 FINISHERS. MANY TEAMS BOWED OUT DURING THE NIGHT — A LONG ONE FOR MANY

Daytona 24 Hours (Stéphane Foulon/DPPI)

THE COMPLICATED INSTRUMENT PANEL FEATURED ON THE MAZDA RX 7

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Spa—2 June
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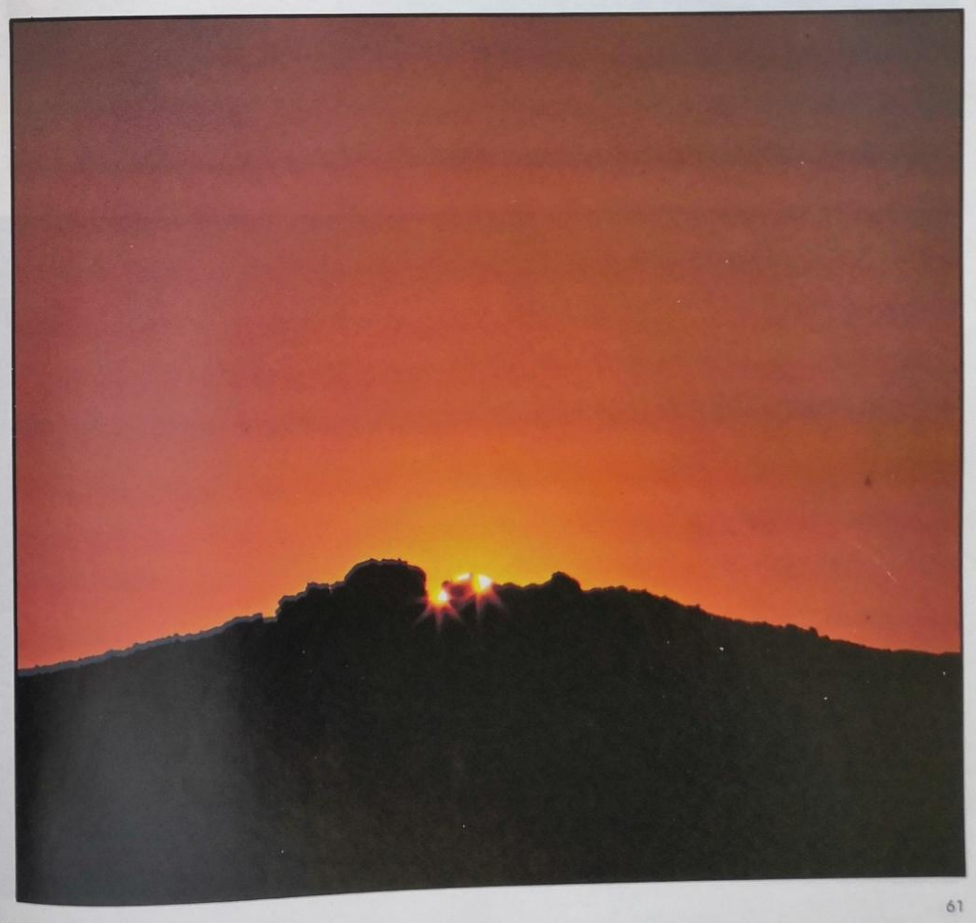
PARIS-DAKAR EXIT THE STARS

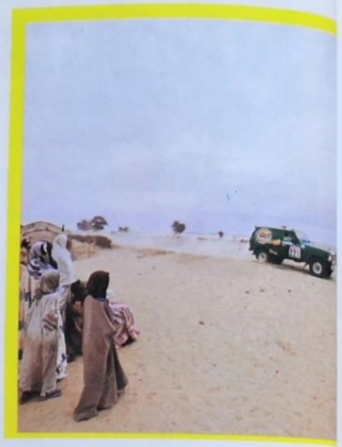
This year's Paris-Dakar Rally can be rated as one of the most punishing of all seven editions. The numerous champions competing (Ickx, Darniche, Thérier, Pescarolo, Béguin, Mass, Metge...) and the top level teams (Rothmans Porsche, Citroën, Audi, Lada etc.) could do nothing to prevent amateur driver, Zaniroli, from winning at the wheel of his 200 bhp Mitsubishi Pajero, as they all dropped out one after the other.



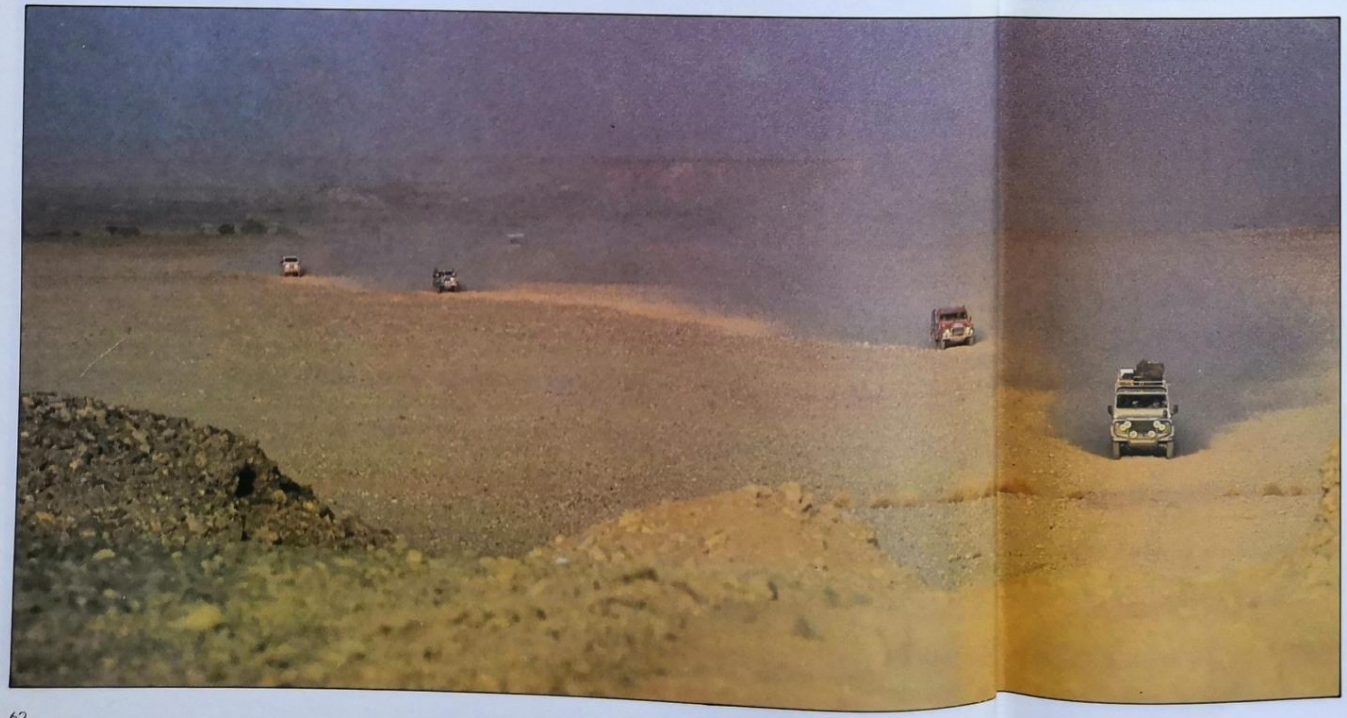
The Paris-Dakar Rally has become a favourite for many international motorsport stars and show-business personalities. This year's 14,000 km/8,750 mile long edition was no exception to the rule despite the particularly gruelling nature of the itinerary through Southern Algeria, Niger and Mauritania. This year, the professionals flew off with a quick lead in a bid to leave many of their high performing rivals trailing. Their pace was far too brisk for this type of enduring rally and the list of retirements steadily became longer as the engines breathed their last. The Lada team bowed out soon after arriving on the African continent, and Algeria was also the end for Béguin, (Mitsubishi) and Thérier (victim of a serious accident at the wheel of his Citroën Visa 4x4). Early Rally leader, Darniche (Audi Quattro) also had to withdraw as he approached the Nigerien border.

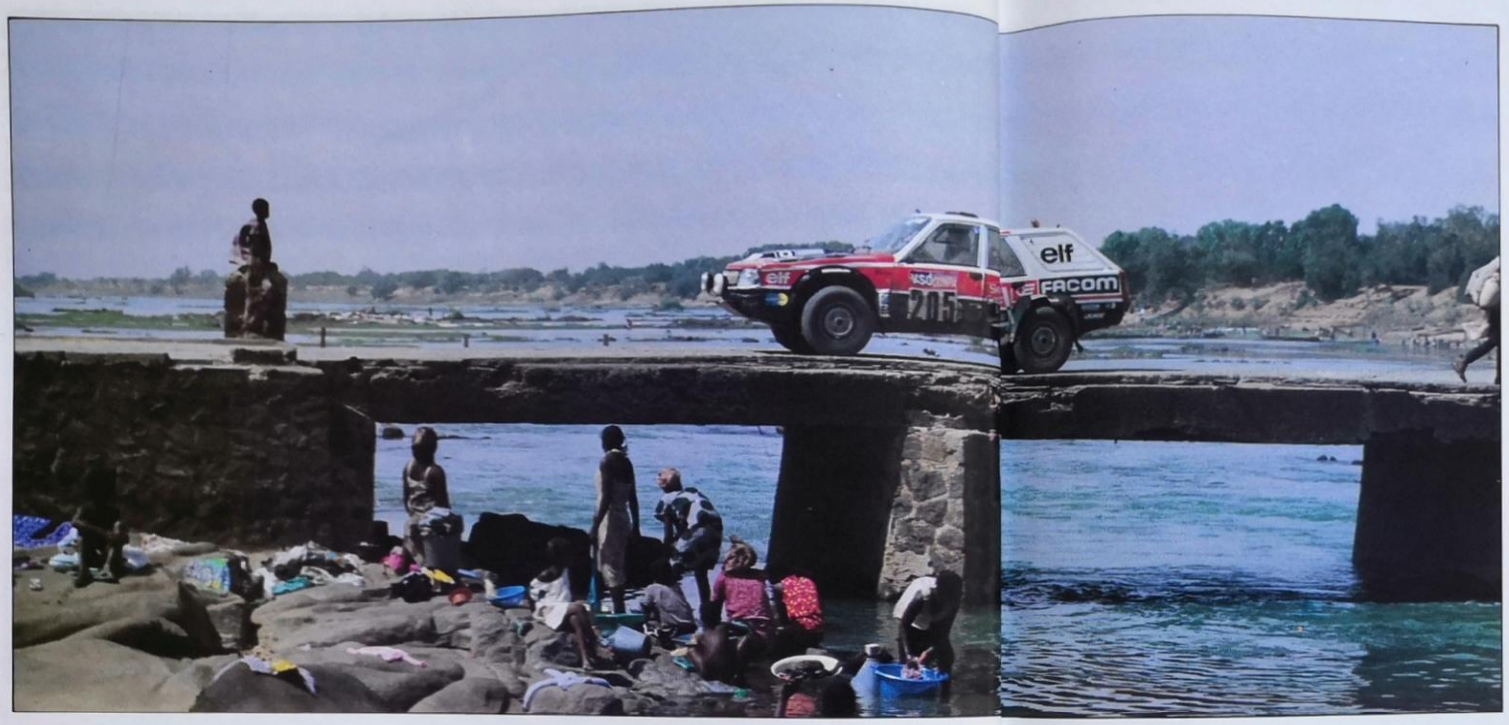
Porsche had entered three 959 prototypes driven by Metge, Ickx and Mass, but they were plagued with suspension problems which had them following the astonishing Opel Manta 400, driven by the Belgian, Guy Colsoul, who put in a series of phenomenal performances in his 2-wheel drive, leaving many dumbfounded.

Once the Porsches' official retirements had been declared, (accidents for Ickx and Mass, oil leak for Metge) together with the two other Audi Quattros (driven by Lapeyre and former biker, Hubert Rigal), the remaining contenders for victory were the two Mitsubishi Pajeros (Zaniroli/Da Silva and Cowan/Syer), the "Pacific" Land Rover (Pescarolo) and African Rally specialist, Pierre Fougerouse's Toyota. Unfortunately, Colsoul had to drop out through engine failure at the half way point.



First came the desert and a surprise. Colsoul flew off with the lead when Darniche (Audi Quattro) was forced to retire, whereas Fougerouse (Toyota) lay in wait, ready to pounce at the first available opportunity...





... And then came Western Africa as the Rally wound its way through Senegal. The Marreau brothers (Renault Estate proto) brilliantly fought their way back up amongst the forerunners. But they didn't sight any Rothmans Porsche 959s...

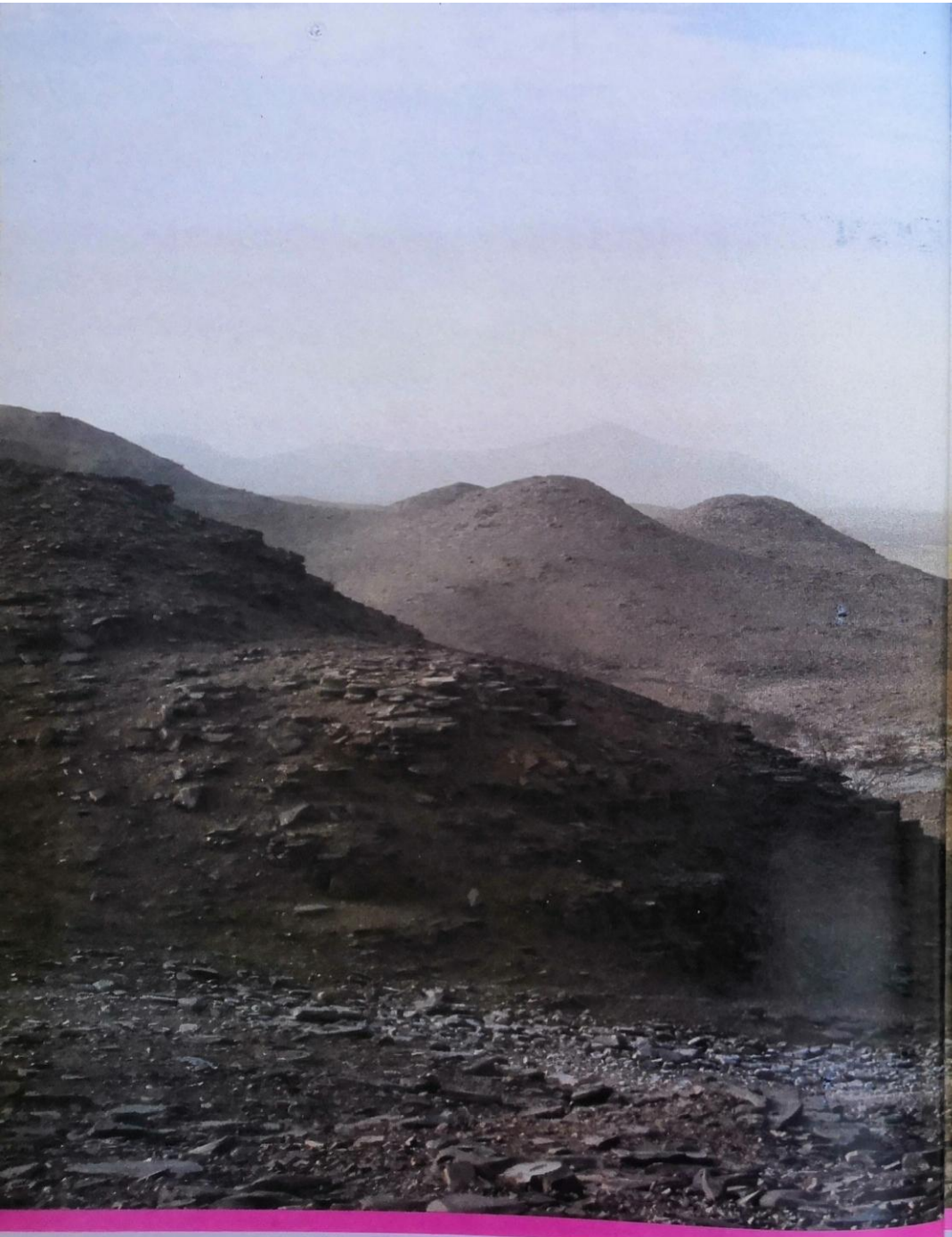
FINAL RESULTS

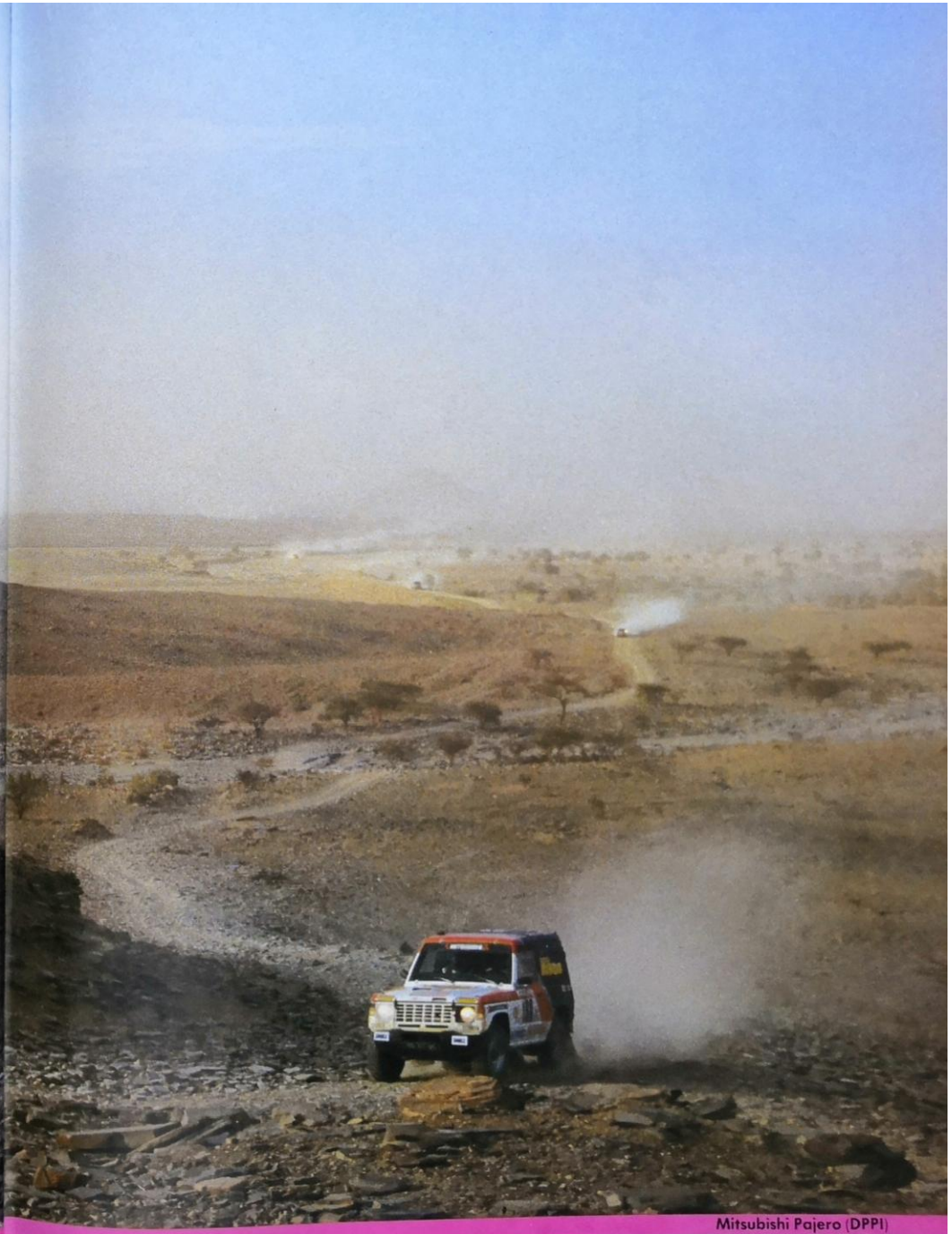
1. Zaniroli/Da Silva (Mitsubishi Pajero)	*48hours 27m 00s*
2. Cowan/Syer (Mitsubishi Pajero)	*48hours 53m 19s*
3. Fougerouse/Jacquemar (Toyota)	*54hours 01m 32s*
4. Ratet/Delabre (Toyota)	*60 hours39m 29s*
5. Marreau/Marreau (Renault prototype)	*60hours 43m 31s*

The Paris-Dakar is notorious for the hardships experienced along the desert tracks and it means that the back-up vehicles have the particularly unrelenting task of trying to equal the performances of their team in order to keep up. Naturally, the service crews invariably arrived a considerable time after the race cars themselves — barring eventual breakdowns. Organiser Thierry Sabine, had eliminated the possibility of air-rescue crews. The particularity of the Paris-Dakar compared with traditional Rallies is that fast driving and powerful cars are not as important as steady even progress. Journalist, Patrick Zaniroli and fellow team member, Andrew Cowan (or "Marathon Man"), finished the Rally in great style to give Mitsubishi a 1-2 placing. With only a couple of hundred miles to go to Dakar beach, Pescarolo had to admit defeat when his engine gave up the ghost. He would certainly have taken the third step on the rostrum steps otherwise.

Paris-Dakar "Bivouacking" (DPPI)

ONLY THE FASTEST OF THE COMPETITORS BEAT NIGHTFALL HOME.





Mitsubishi Pajero (DPPI)

ZANIROLI MADE IT THROUGH THE HELLISH TRAPS. REGULARITY PAYS...

HIGH ON EMOTION

IT'S ALWAYS A PLEASURE TO SEE ARI VATANEN WIN A RALLY. THE FINN MUST CERTAINLY BE ONE OF THE MOST SINCERE AND RATE AS UNPRETENTIOUS DRIVERS ON THE INTERNATIONAL RALLYING SCENE. HAD HE EVER BEEN THROUGH SO MANY CONTRADICTORY EMOTINOS DURING AN ENTIRE RALLY? THE 53RD EDITION OF THE MOST PRESTIGIOUS WINTER RALLY, THE MONTE CARLO, WILL BE ONE HE'LL REMEMBER.

Ari Vatanen strode over towards the café, with us trotting along behind at his heels. *"Good idea, 'cos I don't have any French money on me. You can buy me a hot chocolate".* Ari's got another 30 minutes to wait until the start to the St Bonnet Le Froid special stage is given. He'd followed a hunch, and against the advice of his ice-note crew, he'd asked for C3s to be fitted - ie, soft snow compounds. The door opened, and in walked Walter Röhrl. He too, had changed his mind at the last minute and his mechanics had swopped the Michelin A3s (mixed snow) for C3s. Walter's team mate, Geistdorfer, was with him and Blomqvist.

Just over an hour later. Ari was back from the special stage and with the Peugeot service crew. The front of his car looked a dented mess and the windscreen had been smashed in.

"I don't know how many spectators there were in that special stage — it seemed like millions to me. Most of them were standing near the finish with quite a few standing on the road itself, not in the middle, granted, but lining each side. As I came out of a very slippery right-hander, my car slid round too much and I could feel the rear banging against the spectators standing there. Bang, bang, bang. I must have hit at least a dozen. I lost control of the car and it went careering off towards the other side of the road where I must have knocked just as many people. One of them fell onto the windscreen. Yes, I must have caused a number of injuries."

Ari's fears were unfounded as it turned out. Only two of the spectators had slightly suffered. The spectators can thank their lucky stars. While the driver was talking, the Peugeot service crew got on with their job and demonstrated that their efficiency wasn't just legendary. The radiator took ten minutes to change as well as the front bodywork and the windscreen. The engine went through a careful routine check and the fuel tank was also topped up. Wide slicks were mounted in place of the studded tyres. The Peugeot 205 Turbo 16 was ready for the next special stage.

TYRES AND CARS

Tyre choice, as always, plays a decisive role in the Rally. Bruno Saby was angry at himself for having opted for slicks for the La Souche special stage, the last of the day.

"I was caught out on the snow just before the finish. There was no damage to the car, but if it hadn't been for the spectators. I would never have been able to continue."

Walter Röhrl was the fastest on that stage, but he wasn't entirely satisfied with his choice of rubber either.

"Yes, I must have been completely mad to opt for slicks on a 400 bhp car with all those icy patches. I don't know what got in to me."

Terry Harryman, Vatanen's co-driver, was in entire agreement.

"Too dangerous. And for what? At the end of the dry part, we were only a couple of hundred yards behind Blomqvist. But he beat us by a second to the finish. Stig had mounted heavily studded Michelin A3s. He was as fast as us, but he didn't have to take as many risks as we did on the snow."

The Lancia drivers didn't have to cope with the problem of adapting to changing driving conditions. The mechanics were there waiting for them where the snow started and all four wheels on both Toivonen and Biasion's cars were changed. It was not all plain sailing for everyone though. Forty seconds had been allowed for changing all the wheels, but it took the mechanics over a minute on Toivonen's car and they were still at it when Biasion's Lancia loomed. He had no option but to wait until it was his turn...

The atmosphere is warm and lively at the Veynes Peugeot dealership near Gap. The Peugeot Talbot Sport mechanics are busy preparing the three cars for the last special stage before the Gap rest-halt, Les Savoyons-Sigoyer. Ari Vatanen had taken fastest times on all but two of the stages since the start of the 'étape commune', on stages completely dry (La Motte Chalençon-St-Nazaire le Desert) and completely snow (St Michel les Portes-Saint-Barthélemy du Gua).

Ari has rarerly been as relaxed, cheerful and talkative.

"On the last stage, the Col des Garcinets, I took the wrong line into a hairpin. There was a snow plough badly parked just at the exit and I had to pull up and reverse. I still managed to finish 14s ahead of Walter and 29s ahead of Stig, who finished 3rd! Not bad over 14.3 miles."

No, Ari's not bragging, it's just his way of showing how pleased he is to be driving such a high performing car — and pleased that he's driving well.

Vatanen knows deep down that nothing can go wrong now. His technicians and ice-note crews tell him what the Savoyons stage is like and in a split second he says what tyres he wants. The fact that Röhrl has chosen a completely different rubber doesn't make him hesitate at all. The choice was right and Vatanen was 40s faster than Röhrl over 14.3 miles and was now leading the Audi driver by 3m 19s. What more could he ask for?

DEATHLY SILENCE

Rally drivers have been staying at the Hôtel de la Paix at Gap for over twenty years now and Jean Todt had checked into Raymond's place as he usually does. I went down to have a beer at the bar only to find all the lights had been turned off. It looked rather morbid and became even more so when Ari entered the bar, his face taut and pale. He appeared to be in a daze. A French television crew were also in the bar but Bernard Giroux, the motorsport commentator, didn't even dare go and talk to the Finn.

"They clocked in 4m early at the Gap parc fermé." Bernard murmured quickly.

Walter Röhrl tried every trick in the book — to no avail.

TEAM BY TEAM

PEUGEOT TALBOT SPORT

The three 205 Turbo 16s entered were similar to those seen at the San Remo and the RAC. In their asphalt configurations, they weigh in at 980 kilos and develop 350 bhp. The teams were made up of Ari Vatanen/Terry Harryman, Timo Salonen/Seppo Harjanne and Bruno Saby/Jean-François Fauchille. There were only very slight modifications visible on the Peugeots which were equipped with Michelin tyres. TRX A2, A3 and C3 rubber was available for the snow.

AUDI SPORT

Only two cars were entered for Walter Röhrl/Christian Geistfdorfer and Stig Blomqvist/Björn Cederberg. They were both Quattro Sports and boasted over 400 bhp tucked away under the engine cover. Although Walter Röhrl had only a week in which to practice on the Monte Carlo roads, he managed to get in a lot of suspension and tyre testing and appeared confident.

LANCIA

Although there was only one Lancia Rally 037 sporting the Martini colours, there were really two works entries and "Micky" Biasion/Tiziano Siveiro's car was identical to the Henri Toivonen/Juna Piironen entry. Biasion was racing for Jolly Club and sported the Totip colours.

Following the new rules, larger rear racing tyres had been mounted. The main change concerned the engine which had gained about 30 extra bhp following the complete recasting of the admission, together with the adding of a water injection system. The Lancia in its new configuration now produces 350 bhp and still weighs in at 960 kilos, the minimum authorised for its class.

CITROEN

The Citroen Visa 1000 Pistes present at the Monte Carlo Rally weighed in at between 770 and 780 kilos, and developed between 145-147 bhp. They were all on Michelin rubber. The official teams were made up of Jean-Claude Andruet/Annick Peuvergne, Maurice Chomat/Didier Breton and Philippe Wambergue/Bernard Martin Dondoz. Private Visa 1000 Pistes were entered by François Chauche/Thierry Barjou and Christian Dorche/Gilles Thimonier.

RENAULT

Dany Snobeck/Béchu's Renault 5 Turbo was entered and prepared by Snobeck himself and he was helped by the factory. For the Rally he was mainly assisted by the Renault Galtier team. His car was Michelin-shod.

"What?"

Came the voice of Jean Todt from the phone booth. He was on to the Monte Carlo organisers and was filing a protest and demanding that the 8m penalty be lifted. Terry Harryman stepped out of the booth, a broken man. He stretched out his hand towards somebody's beer.

"Just a sip, if you don't mind."

"Sure, go ahead I'll get you another if you like."

"No, I don't deserve one. How could I have been such an idiot?"

Nobody asked any questions. The Irish co-driver stared in front of him at nothing in particular. He must already have gone over what had happened time and time again in his mind. Then he explained in an expressionless voice.

"For the Monte Carlo, each page of the time card is divided into three parts. There's just one figure printed on each page which gives you the time allowed

for the following road section. At the control before the stage, the marshal writes down the actual time that the car clocks in as well as the theoretical time they are due to start the stage. That's the departure time for the next road section. Usually, it actually coincides with the real time at which the car sets out on the stage, when it doesn't, the stage marshal usually puts a cross through the original departure time. The start to the Savoyons-Sigoyer stage was delayed 4m but the theoretical departure time wasn't crossed out on my card. I just didn't think and I worked out our arrival time at Gap basing my calculations on the original time."

A real professional co-driver, Terry wasn't trying to make excuses, he was just trying to explain what had happened. Jean Todt then stepped out of the phone box, he looked shattered.

THE REACTION

On the first stage after Gap, Vatanen managed to pull back 19s. He was then 26s faster than Röhrl on the following stage. The Finn wasn't going to let such a set-back interfere with his driving skills. Nobody else tried to put up a fight against Vatanen, they were all at least 1s slower per mile — even his rivals driving the same 205 Turbo 16.

"It's true what the journalists say. You don't have to be an ace driver in order to win when you're at the wheel of a Peugeot 205 Turbo 16," Ari explained.

It's not very fair to compare Vatanen's results with those of his fellow team members. Neither Timo Salonen, nor Bruno Saby, were expecting to have such difficulty driving the 205 Turbo 16 on tarmac — they couldn't believe just how much grip they were getting and how much more was left to exploit. Salonen hadn't even had time to try out his car fitted with racing tyres before the start of the Rally. He slowly got to grips with his car and clearly demonstrated his skills on the snow-covered stages when he came in second behind *"Captain"* Vatanen. He also scored the 3rd fastest time once. When Salonen was sure of his 3rd position, he eased up to keep it to the end.

Many people consider that Bruno Saby got off to a rather disappointing start —including the driver himself. The pressure was perhaps too much for the only Frenchman at the wheel of a car with a chance of winning. His driving appeared to be hesitant and unmethodical up until the half-way point. But from the Gap halt, Saby's driving became more accurate and he overcame any doubts he may have had as to his capabilities. He began to feel much more confident. No criticisms can be made concerning his times during the Final Run, he even added a bit of excitement to the Rally.

"We've got absolutely no hope of winning," admitted Roland Gumpert as the Audi mechanics were getting Röhrl and Blomqvist's cars ready for the end of the 'étape commune'. *"Walter's conceding, on average, over 1s a mile. If we wanted to change the suspension on the cars, it takes eight mechanics and about 20m to do the job. The road timing has been cut so fine that we don't have enough time to do that. That's why we have to compromise with mixed snow and asphalt settings. During testing prior to the Rally, we calculated that this type of arrangement, instead of fitting the ideal suspension combination, would lose us 1/2s a mile. I believe that in pure performance figures, that the Audi Quattro Sport is just as quick as the Peugeot."* Without any modesty whatsoever, Roland Gumpert went so far as to say, *"You'll see at the Swedish round. There the entire rally will be run over snow. We won't have to worry about continually changing the suspension."*

The Audi chief's comments are in fact valid. It only takes four mechanics between 4 and 5m to change the suspension on the Peugeot. The suspension was continually adapted throughout the Monte Carlo to suit the tyres. When racing tyres were fitted, for example, lower suspension was automatically fitted. That is one of the main advantages of creating a purpose-built competition vehicle, carefully designed to make its adaptation to all kinds of terrain, and even each stage, that much easier and quicker.

Roland Gumpert is unfortunate in that the further his cars are left behind the Peugeots, the harder it becomes to find good excuses. Soon there won't be any left to make. Roland Gumpert doesn't smile now as much as he used to, when Audi were the unquestionable world rally champions but he's still just as persuasive... even if his drivers are not entirely convinced. Christian Geistdorfer sheepishly admitted that the Quattro Sport was indeed a difficult car to drive, looking guilty as if he knew what he was letting himself in for.

"It wasn't just a case of choosing the wrong tyres. We had no chance at all on the narrow twisting stages — whatever tyres we had, like on SS 18, Les Savoyons-Sigoyer. There we lost 44s over 14.3 miles. The car has a great tendency to oversteer. Walter doesn't have too much difficulty when the roads are wide, as he can line the car up as he goes into the turns. That becomes impossible on roads not much wider than the car itself. The only solution is for him to lift his foot off the throttle and then back down, waiting for the power to come back. There's very little power at low revs and we have to accept losing time. There's nothing else we can do."

The Audi Quattro Sports were also slowed by chronic understeer problems on the stage covered by fresh snow, contrasting with the perfect touch of oversteer on the Peugeot, which the drivers had no trouble in controlling with the throttle pedal.

As expected, the constructors finished in the following order — Peugeot, Audi, Lancia, Renault 5 Turbo, Citroen Visa 1000 Pistes. Dany Snobeck took advantage of the last night to get past Andruet and finish the 53rd edition of the Monte Carlo Rally in 7th position. Dany admitted that he didn't put in consistently good results as he wasn't feeling confident along the tricky route. The snow undoubtedly helped the 4wd Citroen 1000 Pistes in finishing the Rally bunched together, from 6th place onwards, ie just behind the Peugeots and the Audis, but ahead of the Lancias. There's no denying that the little French cars put in some extraordinarily good results, and the drivers can be well pleased with themselves.

Veteran Jean-Claude Andruet proved that he hadn't lost any of his driving skills and finished first of the Citroen gang. Maurice Chomat passed his Rallying test with flying colours. He wasn't as experienced as his senior team mate with racing tyres and it took a while for him to adjust. He soon managed to close the gap and then equalled Andruet's performances, going on to beat him on especially slippery terrain, as on the St Michel les Portes-St Barthélemy du Gua (SS10) or the Chartreuse (SS12).

Romain Feitler (Audi 80 Quattro) made many wrong decisions concerning his tyres and the relative lack of snow also stopped him from fighting for a Group N victory. Jacques Panciatici put in some quite spectacular driving at the wheel of his Alfetta GTV 6, but he never managed to recuperate the 8m lost at the beginning of the Rally, when the rear suspension went. Bernard Dongues proved that he was fast on asphalt, despite his BMW 323i having 70,000 miles on the clock! However, he had difficulty controlling his car on the snow and ice. Alain and Sylvie Oreille had an excellent maiden-Monte Carlo and clearly dominated Group N. They richly deserved their group win, finishing over 7m ahead of Panciatici.

Bertrand Balas bought himself an Alfasud Sprint especially for the Rally, hoping for a lot of snow. He had to accept Guy Chasseuil's supremacy, driving a Golf GTi, until snow turned up just where he wanted it to — in his back garden, in the Grenoble hinterland. Bertrand was quick to build up a 4m lead, proving his left-foot braking skills to perfection. However, Chasseuil gradually caught up, despite lack of power at low revs, but missed catching the Alfa by 33s. Jean-Pierre Ballet also put in some excellent results. It was his first Rally at the wheel of a Group A Peugeot 205 GTi which he uses every day to go to work. He had fitted a high-ratio gearbox together with a special cam shaft which had his car developing 120 bhp. Ballet managed to stay ahead of Balas during the early stages of the Rally, but lost all chance of success when he encountered the snow, being without suitable tyres. He finished 15th overall and 3rd in Group A.

There were 69 cars at the finish out of a total of 117 at the start of the Rally, exceptional at a Rally like the Monte Carlo. All the works drivers finished, with the exception of Wambergue in the Visa. Rally cars are steadily improving, are more reliable and are prepared more and more thoroughly. ■

The style's there alright, but a 2-wheel drive just can't put in the same kind of performances.

Bertrand Balas took advantage of four snow-covered stages and made sure of a victory in Group A.

THE RACE

There were 117 cars at the start of the Monte Carlo Rally. Despite snow on the Sestrières and the Bad Homburg concentration runs and the wet driving conditions on the other roads, it was a trouble-free start with only Gauthier (Lancia Rally) retiring. François Chauche had problems when the differential went on his Citroën Visa 1000 Pistes and he too, was an early victim when his Citroën engine blew during the first stage.

Ari Vatanen put in the fastest time of 1m 22s and thus became the first Rally leader, followed by the two Audis driven by Röhrl and Blomqvist, a mere second behind, with Saby 2s behind. The Peugeot had a 6s lead on the fastest of the Lancia contingent, the Italian, Biasion. Mixed driving conditions were on the menu for the second long and narrow special stage at St Bonnet le Froid. To begin with there was snow, followed by slush and then a good seven miles of tarmac. Most cars were fitted with well-studded tyres. The spectators were causing trouble in their earnestness not to miss any of the show and they succeeded in cutting off the access lanes to St Bonnet. During the stage, Vatanen spun twice. With only a couple of hundred yards left to the finish, he went rather wide into a turn and sent a few road-side spectators standing there scuttling off like nine pins as he shunted off. He bounced back onto road and skidded off towards the other side, striking more onlookers. Both the radiator and the windscreen had been smashed, but by some miracle "only" two spectators had been lightly injured. The Finn's antics cost him his lead which went to Röhrl (fastest time) and Blomqvist, both driving Audis. Salonen put in a good performance, finishing only a second behind Röhrl, despite the intercom breaking down. Toivonen had put up a good fight, and was only 15s behind Röhrl. Chomat lost 2m 30s as he had opted to fit studded racing tyres.

Röhrl carried on with his show over the twisting but dry Lalouvesc special stage. His time of 12m 56s gave him an 8s lead over Toivonen and 9s over Vatanen. He had built up a cushion of more than 23s over the others. Then it was time for the Moulinon special stage which was almost entirely free of damp patches. Biasion put on a superb demonstration of his talents on asphalt surfaces and was unbeatable with a very fast time of 25m 17s. He was 15s quicker than Vatanen, 18s faster than Röhrl, whose team mate was lagging by a good 30s. These four drivers were sitting in the first four overall positions, the Rally leader being Röhrl this time, as Blomqvist unsure of himself in these conditions, had already conceded 1m 30s.

The last special stage of the day, La Souche, was dry apart from the last few miles which were covered in snow. Röhrl and the Peugeots decided to stick their necks out and fit slicks to their cars, whereas Blomqvist decided otherwise. It was much of a muchness in the end because Röhrl (again) put in the fastest time of 17m 50s, followed by Blomqvist in 18m 00s and Vatanen in 18m 01s. The Swedish driver's choice was certainly the least risky and was confirmed by Bruno Saby's going off on a patch of ice; he had to wait until the spectators came to help him out of his predicament, before he could continue on his way. He was set back 5m. The Lancia's diced with luck by changing their tyres during the stage. The ruse didn't work, with Toivonen conceding 42s and Biasion, 52s. "*We don't really have much choice, with a 2-wheel drive,*" Toivonen commented. "*We wouldn't have had much chance of finishing this stage if we had mounted slicks. On the other hand, the studs would never have lasted over the tarmac portions — they would have been torn out before we'd even got to the snow at the end.*"

Röhrl was leading at the Grospierres rest-halt. He was 35s ahead of Vatanen, 1m 24s ahead of Toivonen, 1m 29s ahead of Biasion, 1m 54s ahead of Blomqvist and 2m 22s ahead of Salonen. The other competitors were quite a way behind, the rest of the pack being led by Snobeck, 4m 59s behind the leader, whilst Andruet who was having a great Rally at the wheel of his Citroën Visa was lying 8th, with 5m 58s between him and Röhrl. Veteran Andruet, had got the better of his younger counterparts at Citroën. Saby was left trailing 8m 12s behind.

Group A had been led from the start up to that point by Guy Chasseuil in the VW GTi. Behind him came Ballet in the Peugeot 205 GTi, followed by Balas' Alfasud Sprint. The Group N leader was the BMW 323i, driven by Dongues ahead of Oreille in the R11 Turbo, Panciatici was close behind at the wheel of the Alfetta GTV 6 and behind him, came Feitler's Audi 80 Quattro. There were 88 teams still left in the Rally at the end of the concentration run.

There were 108 cars at the Grospierres halt, the end of the 'étape de classement'. On the Monday morning, they all left for the étape commune made up of 17 special stages over 309 miles out of a total of 1,110 miles. The first rest-halt of the leg was planned for Monday evening at Grenoble and the second at Gap on the Tuesday evening.

Both the Audi and Peugeot drivers decided against tackling the La Souche stage, which marked the end of the 'étape de classement' and the beginning of the 'étape commune', with slicks. Strangely enough, Lancia opted for slicks, although 2-wheel drive cars are a great deal worse off on the snow than their 4-wheel rivals. Ari Vatanen covered the stage in 17m 06s, improving Walter Röhrl's time from the day before by 44s. The German driver conceded 6s to the leader, Salonen 17s and Blomqvist 21s. The Lancias lost over 1m. Then it was time for the notorious 28 mile Burzet stage. The Lancias had to give up any hopes they were harbouring as they conceded a good two minutes on that stage. The Röhrl/Vatanen duel continued and the German driver even managed to gain the 6s he had lost on the La Souche stage. The other teams were left trailing, Salonen 46s behind and Blomqvist 51s.

The fight for first place was especially fierce along the third stage of the 'étape commune'. The road was completely dry along the 14.5 miles leading from La Motte Chalançon to St Nazaire le Désert. The leading pair proved their superiority over their rivals — even the Lancias couldn't counteract despite the favourable terrain for once. Vatanen flew along the narrow but quick road which left asphalt specialist, Röhrl, 27s in his wake. Vatanen was now only 8s behind the leading Audi. The Rally then headed off towards the Vercors plateau which was turning white as snow began to fall. The first 9 miles were dry and then it was snow through until the end. Toivonen stopped for a tyre change during the stage, conceding just 1m to new Rally leader, Ari Vatanen. The Finn had taught his German rival yet another lesson — 15s this time, whilst Andruet had been derived of rear-wheel drive during the last 12.5 miles of the stage, which were covered in snow. He lost over 1m.

Biasion had the most success on Tuesday's first special stage, leading both Röhrl and Vatanen. The Peugeot driver soon resumed his unrelenting pace and at the end of the five special stages between Grenoble and Gap, his lead had increased to 3m 19s on Röhrl, who had made the mistake of fitting slicks for the Savoyons stage. No-one else had. Blomqvist's turbo blew for the third time since the start of the Rally on his Audi Quattro Sport. This last failure occurred during the short road section. He took a 7m road penalty which put an end to his duel with Saby, sending him down into 5th position, flanked on either side by the Lancias of Toivonen and Biasion.

Vatanen/Harryman checked in 4m early at the Gap parc fermé and the Peugeot was given an 8m penalty. Walter Röhrl unexpectedly found himself back in 1st position, 4m 41s ahead of his rival. The star driver of the Peugeot Talbot team had ruined all his efforts and would have to really take the bull by the horns this time. Salonen was lying 3rd and only 14s behind his team mate and fellow country man, Vatanen. Balas was still holding on to his 6m 05s lead on Chasseuil, whereas Oreille had increased his to 10m on Feitler, who was tailed closely by Panciatici in the Alfetta GTV. Try, try again... Vatanen had become a little more serious-minded but his will to win hadn't suffered. Five special stages were programmed for Wednesday, 30th January between Gap and Monaco, the last section of the 'étape commune'. Vatanen was in fine fighting form and put in the fastest time for the first four special stages. Röhrl did his best, but was always second fastest. The four special stages covered a total of 70 miles and in spite of all his efforts, Röhrl conceded 1m 42s in all. Almost a second per kilometre.

The climax was reached during the last stage before Monaco. Vatanen was again the first off and attacked hard — a little too hard because he went off. Fortunately there was no damage, but he lost 40s, Röhrl was second off after an interval of a minute. He soon had the rear of the Peugeot in sight. He exerted himself even more in an all-out bid to catch Vatanen. However, in a slow hair-pin turn, at 8 mph —according to Geistdorfer — the front right wheel of the Audi hit a rock, smashing the wishbone. Walter managed to get to the end of the stage but he was 1m 01s behind Vatanen. The Peugeot's off hadn't prevented Vatanen putting in the fastest time — he was 1s faster than Blomqvist and 2s faster than Salonen. At the end of the 'étape commune', Röhrl only had a 1m 58s lead on Vatanen, Salonen was lying 3rd, 5m 04s behind, whereas Blomqvist was back into 4th position, 13m 18s behind the leader. Bruno Saby's confidence had returned and he had managed to work his way past Biasion and was ready to chase Toivonen, still in 5th.

Dany Snobeck finished 2nd of the 2-wheel drive contingent.

Behind them came Snobeck, Chomat and Dorche. Wambergue had retired following an off on stage 22. Chasseuil had put in some good driving along the almost completely dry roads and was only 4m 06s behind Balas, the strong Group A leader. Panciatici had succeeded in taking the 2nd Group N place from Feitler but he was still a good 9m behind Oreille's Renault 11 Turbo. The Promotion class has been dominated from the outset of the Rally by the Peugeot 205 Turbo 16 production model, driven by Paul Gardere. There were 88 cars left in the Rally.

The Final Run was made up of 11 special stages over a total of 161.3 miles. "*All*" Vatanen had to do to win, was to be 3/4 of a second faster per mile than Walter Röhrl, which was, in fact, less than he had been managing during the 'étape commune'. The Lancias surprised all and sundry on the first stage, the Col de la Madone. They were faster than both Röhrl and Vatanen by 3s! The German only lost 9s on the Col de Turini. The men at Peugeot Talbot Sport were soon smiling as Saby put in the fastest time on the Col de Couillole stage and Vatanen managed, in one fell swoop, to regain 22s on the leading Audi. During the following stage, the Audi driver, in an all-or-nothing bid, decided to risk fitting intermediary T1 racing tyres. Vatanen kept his studded A3s. A wise choice. The Peugeot began the climb up the slippery slushy Col St Raphael and soon got past Röhrl's Audi Quattro Sport. The three Peugeots arrived to give a 1 - 2 - 3 stage placing for the first time on the event. Röhrl was even slower than Chomat and Andruet's Visas and came in 8th. He lost 2m 23s and the Monte Carlo Rally into the bargain. Comfortable Rally leader, Vatanen, was now 53s ahead of the Audi and stayed ahead until the finish. He was followed by Salonen, Blomqvist and Bruno Saby — in fine spirits as he had passed Toivonen and was looking to catch the Swede's Quattro Sport. Walter Röhrl's ordeal wasn't over yet. The exhaust on his Audi Quattro Sport broke. Then, the engine stalled. The Quattro crew climbed out of their car in a state of panic. They opened the engine cover to find that the broken exhaust had burnt an ignition wire. They quickly repaired it as best as they could and made it home and in 2nd position. In all they were 5m 17s behind Vatanen's Peugeot, followed by Salonen, Blomqvist and Saby — only 34s behind the Swede. Paul Gardere won the Promotion class. Balas beat Chasseuil in Group A by 33s and Oreille was the clear Group N winner with a 7m 22s lead over Panciatici. There were 69 cars at the finish.

RESULTS

SS 1 : DUNIÈRES - BIF D23/D501 (2.2 km)

1. Vatanen-Harryman (Peugeot 205 T16), 1m22s (1st Group B), 2. Blomqvist/Cederberg (Audi Quattro), 1m23s, 2. Röhrl/Geistdorfer (Audi Quattro), 1m23s, 4. Saby/Fauchille (Peugeot 205 T 16), 1m24s, 5. Biasion/Siviero (Lancia Rally), 1m28s, 6. Toivonen/Pitronen (Lancia Rally), 1m30s, 6. Snobeck/Bechu (Renault 5 T), 1m30s, 8. Salonen/Harjanne (Peugeot 205 T16), 1m31s, 9. Ayme-Ayme (Renault 5 T), 1m34s, 10. Chauche/Barjou (Visa 1000P), 1m35s, 10. Andruet/Peuvergne (Visa 1000 P), 1m36s, **10. Chasseuil/Baron (VW Golf GTi), 1m36s, (1st Group A),** 10. Chomat/Breton (Visa 1000 P), 1m36s, 10. Dorche/Thimonier (Visa 1000 P), 1m36s, 14. Wambergue/Martin (Visa 1000 P), 1m37s, 15. Schmit/Huller (Porsche 911 SC), 1m39s, 16. Balas-/Laine (Alfasud), 1m40s, **16. Sarrazin/Rouger (Renault 11 T), 1m40s (1st Group N),** 18. Tchine-/Gandolfo (Opel Manta), 1m41s, 18. Beauchef/Dubois (Ford Escort), 1m41s, 18. Ballet-/Vuillemin (Peugeot 205 GTI), 1m41s, 18. Oreille/Oreille (Renault 11 T), 1m41s, 18. Murroni/Murroni (Renault 5 T), 1m41s, 18. Frossard/Boscher (Renault 5 T), 1m41s, 24. Spiliotis/Spiliotis (Porsche 911 SC), 1m42s, 24. Dongues/Rousseau (BMW 323i), 1m42s, 24. Gardere/Bufferne (Peugeot 205 TB 16), 1m42s, 27. Bos/Leuvrey (Audi Quattro) 1m43s, 27. Panciatici/Sappey (Alfa GTV 6), 1m43s, 27. Bour/Sanner (Renault 5 T), 1m43s, 30. Feitler/Demuth (Audi Quattro 80), 1m44s, 30. Chazot/Parmentier (Opel Ascona), 1m44s, 32. Galoy/Leuba (VW Golf GTi), 1m45s, 33. Recordier/Chambavet (Porsche 911 SC), 1m46s, 33. Guyot/Berthier (Peugeot 205 GTi), 1m46s, 35. Metiffiot/Bouvier (Opel Ascona), 1m47s, 36. Sintenie/Sintenie (Opel Manta), 1m48s, 36. Galliano/Valon (Opel Ascona), 1m48s, 36. Zamponi/X (Opel Ascona), 1m48s, 36. Petit/Lacroix (Ford Escort), 1m48s, 36. Derain/Varnier (Fiat Ritmo), 1m48s, 36. Jassaud/Pascal (Renault 11 T), 1m48s, 42. Meylan-/Duvaut (Nissan 240 RS), 1m49s, 42. Trimolet/Ravon (Peugeot 205 GTi) 1m49s, 44. Bilou/Godet (Fiat Rit-

mo 130), 1m50s, 44. Simonet/Grataloup (Talbot Samba), 1m50s, 44. Janiaud/Bourgoin (Talbot Samba), 1m50s, 44. Hupfer/Laissus (Renault 11 T), 1m50s, 44. Viel/Gaujal (Fiat Ritmo 130), 1m50s, 44. Barbargo/Cereth (Fiat Ritmo 130) 1m50s, 50. Poutot/Sabatier (Visa 1000 P), 1m51s, 50. Du Castel/Grossmer (BMW 323i), 1m51s, 50. Thoreau/Dautheribes (Renault 11 T), 1m51s, 50. Agier/Charlois (Fiat Ritmo 130), 1m51s, 50 Séclier/Tzarewski (R5 Alpine T), 1m51s, 55. Cabaniols/Cabaniols (Peugeot 205 GTi), 1m52s, 55. Kuhlewein/Kurrle (VW Golf GTi), 1m52s, 55. Monchal/Coutelen (Talbot Samba), 1m52s, 55. Arzeno/Marmol (VW Golf GTi), 1m52s, 59. Nielsen/Jversen (Renault R5 T2), 1m53s, 59. Monnier-/Poulet (Renault 11 T), 1m53s, 59. Guerdoux/Blanc (Renault 512), 1m53s, 59. Grimaud/Martin (Opel Ascona), 1m53s, 59. Vold/Levele (VW Golf GTi) 1m53s, 59. Antoine/Millet (Renault 11 T), 1m54s, 65. Caminada/Jouve (VW Golf GTi), 1m54s, 65. Brunasso/X (Peugeot 205 GTi), 1m54s, 65. Boubal/Jouval (VW Golf GTi), 1m54s, 68. Guentter/Barth (Mercedes 280), 1m55s, 68. André/André (Talbot Samba), 1m55s, 68. Brych/Marsan (Audi Quattro), 1m55s, 68. Marti/Baudoin (Peugeot 205 GTi), 1m55s, 72. Auvray/Bertrand (Citroën Visa), 1m56s, 72. Brenier-/Gillier (VW Golf GTi), 1m56s, 72. Thibaudat/Moreau (Talbot Samba), 1m56s, 72. Dagat/Sigu (BMW 323i), 1m56s, 72. Chaboseau/Do Amaval (Alfa GTV 6), 1m56s, 77. Ruoff/Gavron (Opel Manta), 1m57s, 77. Lafon/Martin (Talbot Samba), 1m57s, 77. Kreutz/Kirberg (Toyota Corolla), 1m57s, 80. Theveneau/Belin (Alpine A 310), 1m58s, 80. Thuriot/Levivier (Talbot Samba), 1m58s, 80. Martine/Bessard (Peugeot 205 GTi), 1m58s, 80. Cauchi/Cauchi (Talbot Samba) 1m58s, 80. Chevalier/Bondrille (Opel Kadett), 1m58s, 80. Daniel/Rigoulot (Talbot Samba), 1m58s, 86. Corléoni/Ansaldo (R5 Alpine T), 1m59s, 86. Landon/Pages (R5 Alpine T), 1m59s, 86. Fragale/Simoletto (Fiat Ritmo 130), 2m01s, 89. Jaussaud/Anton (R5 Alpine T), 2m01s, 89. Salomon/Gillot (Talbot Samba), 2m01s, 89. Cedo/Dessens (Peugeot 205 GTi), 2m01s, 89. Perillat/Perillat (Talbot Samba) 2m01s, 89. Bizzarilli/Juilla (VW Golf GTi), 2m01s, 89. Huygue/Freeman (VW Golf GTi), 2m01s, 95. Pluchard/Guerreiro (Citroën Visa), 2m02s, 95. Dessi/Audibert (Alfetta) 2m03s, 97. Conjard/Guichard (VW Golf GTi), 2m03s, 97. Noellmer/Fries (Talbot Samba), 2m03s, 97. Picot/Lafarge (Talbot Samba), 2m03s, 97. Diettert/Diettert (VW Golf GTi), 2m03s, 97. Vogt/Ghigo (Peugeot 205 GTi), 2m03s, 102. Bernardet/Moity (Fiat Ritmo 130), 2m04s, 102. Bigoni-Bigoni (R5 Alpine), 2m04s, 104. Piron/Conchon (Peugeot 205 GTi), 2m05s, 104. Audibert/Chevalier (Peugeot 205 GTi), 2m05s, 106. Rocle/Boyer (VW Golf GTi), 2m06s, 106. Motard/Pellerin (Audi Quattro 80), 2m06s, 108. Pages/Micheletti (Autobianchi), 2m08s, 109. Slami/Severin (Talbot Samba), 2m09s, 110. De Fresquet/Valette (Autobianchi), 2m11s, 111. Germandt/Wickstroem (Lada 2105), 2m16s, ...Guichard/Sache (BMW 323i), 1m43s, Azan/Fayolle (Alpine A 310), 1m49s, Soragni/Lambruschi (Opel Manta), 1m57s.

SS 2: ST BONNET LE FROID (23.61 km)
1. Röhrl 17m03s, 2. Salonen 17m04s, 3. Blomqvist 17m08s, 4. Toivonen 17m18s, 5. Vatanen 17m22s, 6. Saby 17m29s, 7. Biasion 17m30s, 8. Andruet 17m32s, 8. Snobeck 17m32s, 10. Wambergue 17m48s, 11. Gardère 18m45s, 12. Dorche 18m51s, **13. Chasseuil 19m07s (1st Group A),** 14. Bos 19m08s, 15. Ballet 19m15s (A), **16. Oreille 19m24s (1st Group N),** 17. Balas 19m26s (A), 18. Dongues 19m34s (N), 19. "Tchine" 19m42s (A), 20. Beauchef 19m51s (A), 21. Metiffiot 19m54s (A), 22. Poutot 20m02s, 23. Schmit 20m7s, 24. Panciatici 20m12s (N), 24. Spiliotis 20m12s, 26. Chomat 20m13s, 26. Janiaud 20m13s, 28. Du Castel 20m15s (A), 29. Simonet 20m24s (A), 30. Feitier 20m25s (N), 31. Recordier 20m26s, 32. Bour 20m27s, 33. Galliano.

SS 3: BIF D532/D228 - LALOUVESC
1. Röhrl 12m56s, 2. Toivonen 13m04s, 3. Vatanen 13m05s, 4. Biasion 13m19s, 5. Snobeck 13m29s, 6. Blomqvist 13m30s, 7. Salonen 13m47s, 8. Saby 14m03s, 9. Wambergue 14m15s, 10. Andruet 14m20s, **11. Chasseuil 14m28s (1st Group A),** 12. Chomat 14m39s, 13. Gardere 14m53s, 14. Ballet 15m06s (A), 15. Beauchef 15m14s (A), 15. Ayme 15m14s, 17. Dorche 15m23s, 18. Record 15m32s, 19 Bos 15m37s, 20. "Tchine" 15m41s (A), 20. Metiff 15m41s (A), **22. Dongues 15m43s (1st Group N),** 23. Balas 15m46s (A), 23. Oreille 15m46s (N), 25. Spiliotis 15m48s, 26. Feitier 15m49s (N), 27. Panciatici 15m50s (N), 27. Sarrazin 15m50s (N), 29. Schmit 15m54s, 30. Agier 16m01s (N), 30. Janiaud 16m01s, 32. 16m02s, 33. Poutot 16m08s.

SS 4: LE MOULINON - ANTRAIGUES (37.25 km)
1. Biasion 25m17s, 2. Vatanen 25m32s, 3. Röhrl 25m35s, 4. Toivonen 25m47s, **5. Panciatici 26m05s, (1st Group N),** 6. Saby 26m11s, 7. Salonen 26m13s, 8. Blomqvist 26m40s, 9. Andruet 27m23s, 10. Snobeck 27m26s, 11. Chomat 28m34s, 12. Wambergue 28m38s, 13. Dongues 29m14s (N), 14. Dorche 29m32s, **15. Chasseuil 29m53s (1st Group A),** 16. Ayme 29m59s, 17. Gardere 30m15s, 18. Ballas 30m15s (A), 19. Sarrazin 30m17s (N), 20. Ballet 30m19s (A), 20. Oreille 30m19s (N), 22. Metiffiot 30m28s (A), 23. Beauchef 31m31s (A), 24. Séclier 31m37s (A), 25. Galliano 31m43s (A), 26. Sintenie 31m47s, 27. Recordier 31m51s, 28. "Tchine" 31m53s (A), 29. Cabaniols 31m58s (N), 30. Conjard 32m00s (A), 31. Meylan 32m10s, 32. Chazot 32m15s (A), 33. Janiaud 32m18s.

SS 5: LA SOUCHE - BIF D 239/N 102 (27.4 km).
1. Röhrl 17m50s, 2. Blomqvist 18m00s, 3. Vatanen 18m01s, 4. Toivonen 18m32s, 5. Salonen 18m34s, 6. Biasion 18m42s, 7. Snobeck 19m49s, 8. Andruet 19m54s, 9. Chomat 20m35s, 10. Dorche 20m39s, 10. Poutot 20m39s, 12. Wambergue 20m46s, 13. Gardère 21m23s, **14. Chasseuil 21m28s (1st Group A),** 15. Ayme 21m32s, - 16. Beauchef 21m41s (A), 16. Balas 21m41s (A), 18. Recordier 21m48s, **19. Oreille 22m10s (1st Group N),** 20. Dongues 22m12s (N), 21. Spiliotis 22m19s, 22. Panciatici 22m21s (N), 23. Ballet 22m23s (A), 24. Janiaud 22m25s, 25. Metiffiot 22m29s (A), 26. Sarrazin 22m30s (N), 27. Feitier 22m31s (N), 28. Tchine 22m39s (A), 28. Jaussaud 22m39s (N), 30. Murroni 22m46s, 31. Thoreau 23m00s (A), 32. Galliano 23m01s (A), 33. Meylan 23m14s.

STANDING AT THE END OF THE FIRST LEG
1. Röhrl/Geistdorfer, 1hour14m47s (1st Group A), 2. Vatanen/Harryman, 1hour15m22s, 3. Toivonen/Piironen, 1hour16m11s, 4. Biasion/Siviero 1hour16m11s, 5. Blomqvist/Cederberg 1hour16m41s, 6. Salonen/Harjanne, 1hour17m09s, 7. Snobeck/Bechu, 1hour19m46s, 8. Andruet/Peuvergne, 1hour20m45s, 9. Saby/Fauchille 1hour22m59s, 10. Wambergue/Martin Dondoz 1hour23m04s, 11. Chomat/Breton, 1hour25m37s, 12. Dorche/Thimonier, 1hour26m01s, **13. Chasseuil/Baron, 1hour26m32s (1st Group A),** 14 Gardere/Dufferne, 1hour26m44s, **15. Dongues-/Trousseau, 1hour28m25s (1st Group N),** 16. Ballet/Vuillemin, 1hour28m44s, 17. Balas/Laine 1hour28m48s, 18. Beauchef/Dubois, 1hour28m58s 19. Oreille/Oreille, 1hour29m20s, 20. Panciatici/Sappey, 1hour30m11s, 21. Ayme/Ayme, 1hour30m12s, 22. Metiffiot/Bouvier, 1hour30m19s, 23. "Tchine"/Gandolfo, 1hour31m36s, 25. Janiaud/Bourgoin, 1hour32m47s, 26. Feitler/Demuth, 1hour32m58s, 27. Galliano/Valan, 1hour33m15s, 28. Murroni/Murroni, 1hour33m41s, 29. Schmitt-/Muller, 1hour34m12s, 30. Poutot/Sabatier 1hour34m32s, 31. Spiliotis/Spiliotis, 1hour34m37s, 32. Séclier/Tzarewski, 1hour34m54s, 33. Cabaniols-/Cabaniols, 1hour34m55s, 34. Meylan/Duvaut, 1hour35m30s, 35. Simonet/Grataloup, 1hour35m39s, 36. Auvrat/Bertrand, 1hour36m06s, 37. Agier/Charlois, 1hour36m21s, 38. Chazot/Parmentier, 1hour36m42s, 39. Thoreau/Dautheribes, 1hour36m48s, 40. Sintemie/Sintemie 1hour37m17s, 41. Brunhasso/X, 1hour37m18s, 42. Guyot/Berthier, 1hour37m30s, 43. Frossard/Boscher, 1hour37m21s, 44. Conjard/Guichard, 1hour37m42s, 45. Nielsen-Jversen, 1hour38m07s, 46. Thuriot/Levivier, 1hour38m40s, 47. Grimaud/Martin, 1hour39m00s, 48. Camimada/Jouve, 1hour39m04s, 48. Brych-/Marsan, 1hour39m04s, 50. Noellmer/Fries, 1hour39m19s, 51. Vold/Vevle, 1hour39m27s, 52. André/André, 1hour39m36s, 53. Jaussaud/Anton, 1hour40m01s, 54. Guentier/Barth, 1hour40m47s, 55. Guerdaux/Blanc, 1hour40m54s, 56. Lafon/Martin, 1hour40m59s, 57. Zamponi/X, 1hour41m22s, 58. Jaussaud/Pascal, 1hour41m37s, 59. Monchal/Coutelen, 1hour41m55s, 60. Petit/Lacroix 1hour42m16s, 61. Deroin/Varnir, 1hour43m00s, 62. Ruoff/Gavron, 1hour43m13s, 63. Bernardet/Moity, 1hour43m14s, 64. Cauch/Cauch, 1hour43m37s, 65. Dagat/Sigu, 1hour43m52s, 66. Martine/Bessard, 1hour44m23s, 67. Huygue/Freemai, 1hour44m33s, 68. Sarrazin/Rouger, 1hour44m49s, 69. Vial/Gaujal, 1hour44m51s, 70. Pluchard/Guerreiro, 1hour45m14s, 71. Vogt/Ghigo, 1hour45m35s, 72. Kreutz/Kirberg, 1hour45m42s, 73. Chevalier/Bondrille, 1hour45m44s, 74. Guichard/Zache, 1hour45m52s, 75. Arzeno/Marmol, 1hour46m17s, 76. Diettert/Diettert, 1hour46m44s, 77. Bigoni/Bigoni, 1hour46m49s, 78. Cebo/Dessens, 1hour47m06s, 79. Monnier/Poulet, 1hour47m10s, 80. Kühlewein/Kurrie, 1hour47m13s, 81. Picot/Lafarge, 1hour47m14s, 82. Trimlet/Ravon, 1hour47m33s, 83. Antoine/Rillet, 1houré48m07s, 84. Marti/Baudoin, 1hour48m21s, 85. De Fresquet/Valette, 1hour48m28s, 86. Theveneau/Gelin, 1hour48m43s, 87. Thibaudat/Moreau, 1hour49m05s, 88. Pages/Micheletti, 1hour50m02s, 89. Dessi/Audibert, 1hour50m25s, 90. Boubal/Jouval, 1hour50m27s, 91. Landon/Pages, 1hour51m30s, 92. Fraggle/Simoletto, 1hour51m45s, 93. Salonen-/Gillot, 1hour52m21s, 94. Perillat/Perillat 1hour52m23s, 95. Bizzrilli/Juilla, 1hour53m39s, 96. Hupper/Laissus, 1hour54m14s, 97. "Billu/Godet 1hour54m44s, 98. Azan/Fayollé, 1hour55m01s, 99. Gola/Leuba, 1hour56m06s, 99. Suni/Sevenir, 1hour56m06s, 101. Audibert/Chevalier, 1hour56m08s, 102. Daniel/Rigoulot, 1hour56m25s, 103. Soragni/Lambruschi, 2hours00m03s, 104. Rocle/Pierreboyer, 2hours00m25s, 105. Brenier/Gillier, 2hours04m11s, 106. Chaboseau/Do Amaral, 2hours08m44s, 107. Motard/Pellerin, 2hours22m26s, 108. Corleoni/Ansaldo, 2hours57m04s.

SS 6: LA SOUCHE-BIF 0239/N102 (27.4 km)
Vatanen 17m 6s (1st Group B), Röhrl 17m 12s, Salonen 17m 23s, Blomqvist 17m 27s, Saby 17m 51s, Toivonen 18m 7s, Biasion 18m 9s, Snobeck 19m 6s, Chomat 19m 18s, Andruet 19m 21s, Wambergue 19m 47s, Dorche 19m 53s, **Chasseuil 20m 15s (1st Group A),** Balas 20m 23s, **Oreille 20m 28s (1st Groupe N),** Recordier 20m 29s, Beauchef 20m 30s, Spiliotis 20m 36s, Aymé 20m 37s, Golay 20m 52s, Murroni 20m 57s, Metiffiot 20m 57s, "Tchine" 20m 58s, Panciatici 20m 58s, Gardere 21m 01s, "Bilou" 21m 05s, Meylan 21m 7s, Dongues 21m 8s, Sarrazin 21m 11s, Ballet 21m 12s, Conjard 21m 14s, Brych 21m 14s, Feitler 21m 15s.

SS 7: BURZET (45.040 km)
Röhrl 29m 49s, Vatanen 29m 55s, Salonen 30m 35s, Blomqvist 30m 40s, Saby 31m 18s, Biasion 31m 51s, Toivonen 32m 37s, Snobeck 32m 40s, Chomat 32m 53s, Andruet 33m 21s, Wambergue 33m 35s, Dorche 34m 34s, **Chasseuil 34m 56s (1st Group A),** Ayme 35m 03s, Gardere 35m 19s, **Oreille 35m 36s (1st Group B),** Balas 35m 52s, Panciatici 35m 52s, Ballet 35m 55s, Metiffiot 36m 03s, Sarrazin 36m 04s, "Tchine" 36m 08s, Beauchef 36m 10s, Poutot 36m 17s, Feitler 36m 18s, Spiliotis 36m 21s, Galliano 36m 21s, "Bilou" 36m 22s, Meylan 36m 50s, Thoreau 36m 58s, Janiaut 37m 00s, Golay 37m 00s, Vold 37m 00s.

SS 8: La MOTTE CHALANCON-ST-NAZAIRE
Vatanen 15m 08s, Röhrl 15m 35s, Toivonen 15m 43s, Biasion 15m 47s, Saby 15m 47s, Salonen 15m 58s, Snobeck 16m 20s, Blomqvist 16m 41s, Andruet 16m 43s, Wambergue 17m 9s, Chomat 17m 12s, Dorche 17m 34s, **Chasseuil 17m 49s (1st Group A),** Ballet 17m 56s, **Oreille 18m 11s, (1st Group N),** Ayme 18m 31s, Gardere 18m 32s, Balas 18m 38s, Metiffiot 18m 45s, Beauchef 18m 47s, Feitler 18m 47s, Panciatici 19m, Sarrazin 19m 05s, Monchal 19m 18s, "Tchine" 19m 24s, Janiaud 19m 28s, Seclier 19m 32s, Derdin 19m 37s, Recordier 19m 38s, Murroni 19m 46s, Conjard 19m 47s, Spiliotis 19m 52s, Guyot 19m 52s.

SS 9: ST-JEAN-EN-ROYANS-BIF-076/0178 (32 km)
Vatanen 20m 43s, Röhrl 20m 58s, Blomqvist 21m 08s, Saby 21m 26s, Toivonen 21m 56s, Salonen 22m 01s, Chomat 22m 30s, Dorche 22m 59s, Biasion 23m 13s, Snobeck 23m 39s, Wambergue 23m 44s, Gardère 23m 44s, Andruet 23m 46s, **Balas 24m 22s (1st Group A), Oreille 24m 27s (1st Group N),** Metiffiot 24m 43s, Feitler 24m 53s, Chasseuil 25m 00s, Beauchef 25m 30s, Ayme 25m 33s, Ballet 25m 44s, Zamponi 25m 59s, Recordier 26m 02s, Sarrazin 26m 05s, Cabaniols 26m 12s, "Tchine" 26m 21s, Deroin 26m 30s, Brunasso 26m 34s, Guyot 26m 42s, Daniel 27m 01s.

SS 10: ST-MICHEL-ST-BARTHELEMY (37.020 km)
Vatanen 29m 54s, Salonen 30m 22s, Röhrl 30m 47s, Blomqvist 31m 06s, Chomat 31m 26s, Saby 31m 36s, Andruet 31m 50s, Toivonen 32m 15s, Wambergue 32m 29s, Biasion 33m 23s, Snobeck 34m 01s, Dorche 34m 14s, **Balas 36m 23s (1st Group A),** Gardère 37m 11s, Ayme 37m 21s, **Oreille 36m 23s (1st Group N)** Panciatici 38m 03s, Feitler 38m 12s, Janiaud 38m 13s, Beauchef 38m 19s, Cabaniols 38m 28s, "Tchine" 38m 29s, Dongues 38m 34s, Spiliotis 38m 37s, Zamponi 39m 04s, Ballet 39m 09s, Sarrazin 39m 11s, Noutot 39m 12s, Brunasso 39m 43s, Séclier 40m 20s, Monchal 40m 30s, Grimaud 40m 38s, Chasseuil 41m 07s.

SS 11: ST-BARTHELEMY-LAVALDENS (19.320 km)
Vatanen 14m 20s, Salonen 14m 28s, Blomqvist 14m 35s, Röhrl 14m 37s, Saby 15m 6s, Andruet 15m 31s, Toivonen 15m 40s, Wambergue 16m 08s, Snobeck 16m 37s, Dorche 16m 41s, Sarrazin 16m 41s, Biasion 16m 48s, **Balas 17m 11s (1st Group A),** Ayme 17m 49s, **Oreille 17m 52s (1st Group N),** Beauchef 17m 54s, Janiaud 18m 0s, Gardère 18m 06s, Metiffiot 18m 07s, Feitler 18m 13s, "Tchine" 18m 15s, Panciatici 18m 16s, Chasseuil 18m 29s, Séclier 18m 29s, Cabaniols 18m 32s, Zamponi 18m 32s, Dongues 18m 35s, Poutot 18m 42s, Ballet 18m 48s, Conjard 18m 48s, Golay 18m 49s, Spiliotis 18m 57s, Recordier 18m 59s.

SS 12: LE SAPPEY-CAFÉ CARRET (43.6 km)
Vatanen 31m 34s, Blomqvist 31m 35s, Salonen 32m 0s, Röhrl 32m 21s, Röhrl 33m 12s, Saby 33m 12s, Chomat 33m 20s, Andruet 33m 29s, Wambergue 34m 02s, Toivonen 34m 08s, Biasion 34m 26s, Dorche 35m 30s, Snobeck 35m 48s, **Balas 37m 33s (1st Group A), Feitler 38m 17s (1st Group N),** Gardère 39m 17s, Janiaud 39m 56s, Oreille 40m 26s, Ayme 40m 49s, "Tchine" 41m 07s, Panciatici 41m 39s, Zamponi 41m 44s, Caranols 41m 59s, Metiffiot 42m 01s, Chasseuil 42m 07s, Spiliotis 42m 15s, Sarrazin 42m 16s, Dongues 42m 29s, Golay 42m 43s, Brunasso 42m 49s, Beauchef 42m 59s, Séclier 43m 12s, Daniel 43m 14s, Lafon 43m 59s.

SS 13: LES CHAMEAUX-PONTS-GAUTET (20.3 km)
Biasion 11m 25s, Röhrl 11m 32s, Vatanen 11m 35s, Salonen 11m 35s, Toivonen 11m 44s, Saby 11m 47s, Blomqvist 11m 52s, Snobeck 11m 58s, Andruet 12m 3"s, Wambergue 12m 53s, Dorche 12m 56s, Chomat 13m 19s, **Ballet 13m 23s (1st Group A),** Chasseuil 13m 41s, Beauchef 13m 43s, **Dongues 13m 48s (1st Group N),** Feitler 13m 50s, Recordier 13m 53s, Gardère 13m 55s, Balas 13m 57s, Oreille 13m 58s, Galliano 14m 02s, Panciatici 14m 09s, Brunasso 14m 14s, Guyot 14m 21s, Spiliotis 14m 26s, "Tchine" 14m 28s, Simentenie 14m 32s, Thoreau 14m 42s, Toutot 14m 45s, Sarrazin 14m 46s, Zamponi 14m 46s, Cabaniols 14m 49s.

SS 14: CHATEAU D'ANCELLE-LA-BATIE N. (11.6 km)
Vatanen 7m 30s, Röhrl 7m 39s, Salonen 7m 51s, Saby 7m 59s, Toivonen 8m 03s, Blomqvist 8m 09s, Snobeck 8m 10s, Andruet 8m 29s, Biasion 8m 52s, Dorche 8m 52s, Wambergue 9m 01s, **Balas 9m 09s (1st Group A),** Galliano 9m 09s, **Oreille 9m 14s (1st Group N),** Ballet 9m 15s, Panciatici 9m 20s, Gardere 9m 24s, "Tchine" 9m 29s, Chomat 9m 29s, Beauchef 9m 30s, Ayme 9m 32s, Spiliotis 9m 33s, Sarrazin 9m 38s, Chasseuil 9m 39s, Metiffiot 9m 44s, Recordier 9m 49s, Séclier 9m 50s, Brunasso 9m 53s, Dougues 9m 54s, Murani 9m 56s, Caminada 9m 56s, Guenther 9m 57s, "Bilou" 9m 58s.

SS 15: CHORGES-PONT DE SAVINES (23.75 km)
Vatanen 16m 22s, Röhrl 16m 37s, Biasion 16m 49s, Salonen 16m 51s, Toivonen 17m 03s, Blomqvist 17m 20s, Saby 17m 35s, Snobeck 17m 44s, Wambergue 18m 29s, Andruet 18m 44s, Chomat 18m 47s, Ballet 19m 15s, Dorche 19m 19s, **Galliano 19m 56s (1st Group A),** Chasseuil 19m 57s, **Oreille 20m 23s (1st Group N),** Gardière 20m 29s, Panciatici 20m 37s, Sarrazin 20m 38s, Beauchef 20m 39s, Ayme 20m 41s, Spiliotis 20m 45s, Balas 20m 58s, "Tchine" 20m 53s, Arzena 20m 54s, Dongue 20m 58s, Recordier 21m 11s, Brunasso 21m 17s, Metiffiot 21m 25s, Poutot 21m 26s, Guenther 21m 26s, Guyot 21m 30s, Hupfer 21m 32s.

SS 16: BIF C1/D1-BAYONS (23 km)
Vatanen 17m 24s, Röhrl 17m 38s, Blomqvist 17m 53s, Salonen 18m 05s, Toivonen 18m 30s, Saby 18m 56s, Snobeck 19m 03s, Wambergue 19m 16s, Chomat 19m 19s, Andruet 19m 40s, Biasion 19m 49s, Gardière 21m 17s, **Chasseuil 21m 27s (1st Group A),** Balas 21m 29s, Dorche 21m 32s, **Oreille 21m 42s (1st Group N),** Ballet 21m 45s, Feitler 21m 51s, Recordier 21m 55s, Beauchef 21m 56s, Dongue 22m 05s, Spiliotis 22m 06s, Ayme 22m 16s, "Tchine" 22m 20s, Galliano 22m 21s, Brunasso 22m 23s, Murroni 22m 27s, Panciatici 22m 46s, Janiaud 22m 46s, Poutot 22m 52s, Sarrazin 22m 59s, Metiffiot 23m 02s, Séclier 23m 09s.

SS 17: CANCELLED

SS 18: LES AVOYONS-SIGOYER (32.270 km)
Vatanen 22m 56s, Röhrl 23m 36s, Salonen 23m 44s, Toivonen 23m 45s, Biasion 24m 02s, Blomqvist 24m 09s, Saby 24m 50s, Andruet 25m 26s, Chomat 25m 40s, Wambergue 25m 49 1/4, Dorche 26m 28s, Barière 27m 52s, **Chasseuil 29m 16s (1st Group A),** Spiliotis 28m 20s, Ballet 28m 22s, **Oreille 28m 25s (1st Group N),** Snobeck 28m 27s, Ayme 28m 28s, Balas 28m 33s, Panciatici 28m 36s, Recordier 29m 0s, Beauchef 29m 02s, Bergues 29m 04s, Feitler 29m 09s, Sarrazin 29m 01s, "Tchine" 29m 24s, Grimaud 29m 24s, Murroni 29m 39s, "Bilou" 30m 09s, Cabaniols 30m 09s, Zamponi 30m 10s, Deraud 30m 14s.

SS 19: LABOREL-MONTAUBAN S-DUVEZE (20.040 km)
Vatanen 12m 35s, Röhrl 12m 54s, Blomqvist 13m 11s, Salonen 13m 18s, Saby 13m 39s, Biasion 13m 43s, Toivonen 13m 56s, Chomat 14m 15s, Snobeck 14m 18s, Andruet 14m 21s, Wambergue 14m 34s, Gardere 14m 56s, Dorche 15m 22s, **Chasseuil 15m 23s (1st Group A),** Beauchef 15m 37s, Ballet 15m 37s, **Panciatici 15m 45s (1st Group N),** Metiffiot 15m 50s, Feitler 16m 42s, Oreille 16m 05s, Balas 16m 10s, Murroni 16m 12s, Dongues 16m 21s, Seglier 16m 21s, Sarrazin 16m 25s, Galliano 16m 30s, "Tchine" 16m 32s, Deroin 16m 34s, Guillot 16m 38s, Grimaud 16m 40s, Cabaniols 16m 41s, Brunasso 16m 42s, Ayme 16m 49s.

SS 20: SISTERON-THOARD (37.220 km)
Vatanen 37m 25s, Röhrl 27m 51s, Blomqvist 28m 08s, Salahen 28m 20s, Saby 28m 48s, Toivonen 29m 17s, Biasion 29m 38s, Chomat 29m 48s, Andruet 30m 00s, Snobeck 30m 06s, Wambergue 30m 11s, Dorche 30m 55s, Garbere 31m 59s, **Ballet 32m 43s (1st Group A),** Chasseuil 33m 04s, Feitler 33m 05s, Ayme 33m 09s, Balas 33m 11s, **Panciatici 33m 15s, (1st Group N),** Oreille 33m 15s, Metiffiot 33m 23s, Dongues 33m 32s, Brunasso 33m 54s, "Tchine" 34m 00s, Guyot 34m 06s, Recordier 34m 27s, Vold 34m 11s, Murroni 34m 25s, Poutout 34m 27s, Sarrazin 34m 35s, Thoreau 34m 36s, Arzeno 34m 38s.

SS 21: LE CHAFFUAT-PUIMICHEL (21.960 km)
Vatanen 13m 8s, Röhrl 13m 21s, Saby 13m 28s, Salonen 13m 32s, Blomqvist 13m 21s, Biasion 13m 46s, Toivonen 13m 58s, Snobeck 14m 12s, Andruet

It took Bruno Saby some time to settle down but he put in some excellent performances on the last night.

14m 34s, Chomat 14m 49s, **Chasseuil 15m 26s (1st Group A)**, **Dongue 15m 34s (1st Group N)**, Ballet 15m 44s, Dorche 15m 36s, Panciatici 15m 42s, Balas 15m 44s, Feitler 15m 57s, Oreille 16m 01s, "Tchine" 16m 08s, Gardere 16m 13s, Metiffiot 16m 13s, Brunasso 16m 14s, Beauchef 16m 37s, Sarrazin 16m 27s, Guyot 16m 30s, Murroni 16m 37s, Sintenie 16m 37s, Chazot 16m 37s, Monchal 16m 37s, Ayme 16m 40s, Recordier 16m 40s, Thoreau 16m 45s.

SS 22 : TRIGANCE-CASTELLANE (33.680 km)
Vatanen 22m 23s, Röhrl 23m 07s, Blomqvist 23m 07s, Salonen 23m 11s, Saby 23m 26s, Biasion 23m 46s, Snobeck 24m 20s, Toivonen 24m 52s, Anoruet 24m 53s, Chomat 24m 54s, Dorche 25m 54s, **Ballet 26m 23s (1st Group A)**, Balas 26m 51s, Chasseuil 26m 55s, Gardere 26m 58s, **Panciatici 27m 06s (1st Group N)**, Ayme 27m 10s, Feitler 27m 13s, Oreille 27m 16s, "Tchine" 27m 17s, Metiffiot 27m 18s, Beauchef 27m 26s, Recordier 27m 44s, Murroni 27m 53s, Poutot 27m 54s, Séclier 28m 05s, Cabaniols 28m 19s, Dongues 28m 31s, Agier 28m 55s, Janiaud 29m 39s.

SS 23 BIF D2211/D5-BIF D10/D17 (30.5 km)
Vatanen 23m 50s, Blomqvist 23m 51s, Salonen 23m 52s, Saby 24m 04s, Biasion 24m 21s, Toivonen 24m 26s, Snobeck 24m 39s, Röhrl 24m 51s, Chomat 25m 19s, Ballet 26m 30s, Andruet 26m 32s, **Chasseuil 26m 37s (1st Group A)**, Dorche 26m 47s, Gardere 27m 06s, Balas 27m 28s, **Sarrazin 27m 28s (1st Group N)**, Dongues 27m 31s, Beauchef 27m 43s, Brunasso 27m 46s, Panciatici 28m 02s, Guyot 28m 04s, Ayme 28m 06s, "Tchine" 28m 10s, Oreille 28m 15s, Nielsen 28m 17s, Murroni 28m 17s, Metiffiot 28m 19s, Caminada 28m 28s, Agier 28m 30s, Conjard 28m 37s, Thoreau 28m 38s, Zamponi 28m 39s, Recordier 28m 40s.

STANDING AT THE END OF THE ETAPE COMMUNE
Röhrl/Beistinorfer 6hours55m12s (1st Group B), Vatanen/Harryman 6hours57m10s, Salonen/Harjanne 7hours0m16s, Blomqvist/Cederberg 7hours8m30s, Toivonen/Piironen 7hours12m11s, Saby/Fauchille 7hours13m58s, Biasion/Biviero 7hours15m4s, Andruet/Peuvergne 7hours30m5s, Snobeck/Bechu 7hours30m54s, Chomat/Breton 7hours33m23s, Dorche/Thimonier 7hours51m13s, Gardère-/Bufferne 8hours10m3s, **Balas/Laine 8hours12m34s (1st Group A)**, Chasseuil/Baron 8hours16m40s, **Oreille/Oreille 8hours18m 42s (1st Group N)**, Ballet/Vuillemin 8hours20m36s, Beauchef/Dubois 8hours23m58s Ayme/Ayme 8hours26m47s, Panciatici/Sappey 8hours27m37s, Feitier/Demuth 8hours29m14s, 'Tchine'/Gandolfo 8hours31m00s, Dongues-/Rousseau 8hours31m58s, Recordier/Chambovet 8hours43m14s, Brunasso/Faria 8hours44m8s, Metiffiot/Bouvier 8hours45m13s, Sarrazin/Rouger 8hours45m35s, Cabaniols/Cabaniols 8hours46m23s, Janiaud/Bourboin 8hours49m56s, Murroni/Murroni 8hours50m9s, Guyot/Berthier 8hours54m45s, Conjard/Guichard 8hours56m43s, Boubal/Jouval 8hours57m4s, Zamponi/Guige 8hours57m23s, Seclier/Tzarewski 8hours58m11s, Thoreau-/Dautheribes 8hours58m31s, Grihaud/Martin 8hours58m44s, Poutot/Sabatier 9hours1m55s, Monchal/Coutelem 9hours2m29s, Brych/Marsan 9hours9m32s, Frossard/Moscher 9hours5m11s, Agier/Charlois 9hours6m50s, Chazot/Parmentier 9hours6m58s, André/André 9hours?m4s, Auvray/Bertrand 9hours7m33s, Deroin/Varnier 9hours7m52s, Vold/Veule 9hours9m12s, Thuriot/Levivier 9hours12m14s, Guenther/Barth 9hours13m42s, Nielsen/Iversen 9hours14m15s, Lafon/Martin 9hours18m17s Vial/Gaujal 9hours19m18s, Caminada/Jouve 9hours20m56s, Noell Mer/Fries 9hours 21m38s, Jaussaud/Anton 9hours 23m17s, Trimolet/Ravon 9hours23m18s, Antoine/Millet 9hours25m5s, 'Bilou'-Bodet 9hours26m11s, Daniel/Rigoulot 9hours27m25s, Sintenie/Sintenie 9hours27m59s, Hupfer/Laissus 9hours29m15s, Theveneau/Gelin 9hours31m47s, Bernardet-/Moity 9hours35m15s, De Fresquet/Valette 9hours36m22s, Pluchard/Guerreiro 9hours37m14s, Kreutz/Kirberg 9hours37m30s, Martire/Bessard 9hours37m31s, Chevalier/Bondrille 9hours38m13s, Cedo/Dessens 9hours40m17s, Petit/Lacroix 9hours 40m41s, Kuhlewein/Kurrle 9hours41m2s, Guichard-/Zache 9hours43m29s, Perillat/Perillat 9hours49m55s, Marti/Baudoin 9hours52m57s, Ruoff/Gawron 9hours53m4s, Landon/Pagès 9hours55m22s, Pages/Micheletti 9hours56m24s Azan/Fayolle 9hours56m36s, Fragale Simoletto 9hours57m 50s, Salomon/Gillot 10hours0m36s, Soragni/Lambruschi 10hours13m30s, Dessi/Audibert 10hours23m45s, Audibert/Chevalier 10hours23m30s, Picot/Lafarge 10hours27m47s, Bizzarilli/Juilla 10hours40m33s, Rocle/Boyer 10hours42m5s, Chaboseau/Do Amaral 10hours42m22s, Suni/Severin 11hours1m32s, Corléoni/Ansaldo 11hours22m45s.

SS 24 : BIF D53/D22-PEILLE (18.6 km)
Biasion 13m 51s, Toivonen 13m 52s, Röhrl 13m 57s, Vatanen 14m 0s, Saby 14m 11s, Salonen 14m 16s, Blomqvist 14m 24s, Snobeck 14m 36s, Andruet 14m 55s, Chomat 15m 38s, **Chasseuil 15m 41s (1st Group A)**, Dorche 15m 41s, Balas 15m 45s, **Panciatici 15m 48s (1st Group N)**, Dongues 15m 50s, Murroni 15m 50s, Ballet 15m 53s, "Tchine" 15m 55s, Metiffiot 15m 55s, Gardère 16m 1s, Sarrazin 16m 15s, Ayme 16m 21s, Oreille 16m 19s, Zamponi 16m 20s, Brunasso 16m 21s, Auvray 16m 27s, Cabaniols 16m 33s, Monchal 16m 33s, Séclier 16m 35s, Janiaud 16m 38s, Guyot 16m 41s, Sintenie 16m 43s, Agier 16m 54s.

SS 25: MOULINET-LA BOLLENE VESUBIE (22.810 km)
Vatanen 18m 21s, Röhrl 18m 30s, Salonen 18m 49s, Saby 18m 49s, Blomqvist 18m 56s, Biasion 19m 20s, Toivonen 19m 27s, Snobeck 19m 50s, Andruet 20m 17s, Chomat 20m 20s, Dorche 20m 48s, Gardère 20m 57s, **Chasseuil 21m 8s (1st Group A)**, Ayme 21m 10s, Balas 21m 20s, Frossard 21m 20s, **Dongues 21m 23s (1st Group N)**, Oreille 21m 26s, Sarrazin 21m 26s, Brunasso 21m 35s, "Tchine" 21m 40s, Murroni 21m 42s, Panciatici 21m 44s, Recordier 21m 51s, Metiffidi 21m 52s, Guyot 21m 53s, Feitler 22m 0s, Ballet 22m 1s, Brych 22m 2s, Conjard 22m 4s, Caminada 22m 6s, Thoreau 22m 7s, Janiaud 22m 7s.

SS 26 : ST SAUVEUR S-TINEE-DEUIL (22.410 km)
Saby 16m 0s, Vatanen 16m 8s, Röhrl 16m 30s, Snobeck 16m 32s, Blomqvist 16m 57s, Biasion 16m 57s, Toivonen 16m 59s, Andruet 17m 4s, Salonen 17m 7s, Chomat 17m 22s, Ayme 17m 47s, Borche 17m 57s, **Ballet 18m 3s (1st Group A)**, **Dongues 18m 7s (1st Group N)**, Balas 18m 8s, Gardère 18m 11s, "Tchine" 18m 15s, Recordier 18m 15s, Panciatici 18m 18s, Chasseuil 18m 32s, Oreille 18m 32s, Feitler 18m 39s, "Bilou" 18m 50s, Metiffiot 18m 52s, Zamponi 18m 53s, Frossard 18m 58s, Vial 19m 4s, Sintenie 19m 7s, Cabaniols 19m 7s, Chazot 19m 10s, Sarrazin 19m 13s, Bernardet 19m 14s, Brunasso 19m 17s.

SS 27 : PUGET THENIERS-TOUDON (27.180 km)
Vatanen 21m 42s, Salonen 22m 14s, Saby 22m 20s, Toivonen 22m 54s, Snobeck 23m 25s, Chomat 23m 36s, Andruet 23m 43s, Röhrl 24m 5s, Gardère 24m 55s, **Balas 25m 13s (1st Group A)**, **Oreille 25m 15s (1st Group N)**, Feitler 25m 16s, Chasseuil 25m 17s, Ballet 25m 18s, Blomqvist 25m 21s, Dorche 25m 24s, "Tchine" 25m 31s, Metiffiot 25m 35s, Brunasso 25m 40s, Dongues 25m 48s, "Bilou" 25m 49s, Murroni 25m 56s, Recordier 25m 57s, Panciatici 26m 0s, Conjard 26m 5s, Cabaniols 26m 9s, Zamponi 26m 13s, Auvray 26m 15s, Boubal 26m 20s, Thoreau 26m 26s, Nielsen 26m 27s, Janiaud 26m 27s, Chazot 26m 28s.

SS 28 : LODA-LUCERAM (16.730 km)
Toivonen 13m 33s, Vatanen 13m 42s, Saby 13m 50s, Blomqvist 13m 58s, Röhrl 14m 2s, Salonen 14m 2s, Biasion 14m 7s, Andruet 14m 44s, Snobeck 14m 44s, Chomat 15m 15s, **Ballet 15m 34s (1st Group A)**, Dorche 15m 37s, **Panciatici 15m 45s (1st Group N)**, Sarrazin 15m 46s, Chasseuil 15m 52s, Dongues 15m 52s, Balas 15m 57s, Ayme 16m 0s, "Tchine" 16m 5s, Oreille 16m 12s, Brunasso 16m 12s, Murroni 16m 17s, Feitler 16m 20s, Metiffiot 16m 23s, Gardère 16m 28s, Recordier 16m 34s, Conjard 16m 36s, Zamponi 16m 50s, "Bilou" 17m 4s, Lafon 17m 6s, Vial 17m 6s, Guenther 17m 9s, Chazot 17m 13s.

SS 29 : DIF D53/D22 — PEILLE (18.6 km)
Toivonen 14m24s, Biasion 14m26s, Vatanen 14m38s, Röhrl 14m46s, Saby 14m55s, Blomqvist 15m16s, Andruet 15m31s, Snobeck 15m40s, Salonen 16m10s, Dorche 16m42s, **Chasseuil 16m44s (1st group A)**, 'Tchine' 16m52s, Chomat 16m52s, **Brunasso 16m52s (1st Group N)**, Panciatici 16m53s, Ballet 17m, Ayme 17m6s, Balas 17m7s, Sarrazin 17m8s, Zamponi 17m8s, Gardère 17m12s, Metiffiot 17m16s, Oreille 17m27s, Recordier 17m28s, 'Bilou' 17m36s, Feitler 17m40s, Dongues 17m51s, Guenther 17m56s, Guyot 17m57s, Thoreau 18m.

SS 30 : MOULINET — LA BOLLENE VÉSUBIE (22.81 km)
Vatanen 19m10s, Röhrl 19m19s, Blomqvist 19m38s, Saby 19m40s, Salonen 19m49s, Toivonen 20m52s, Snobeck 20m53s, Chomat 21m3s, Biasion 21m12s, Andruet 21m14s, Dorche 21m45s, Gardère 22m6s, **Chasseuil 22m25s (1st Group A)**, Aymé 22m29s, **Panciatici 22m39s (1st Group N)**, 'Tchine' 22m46s, Ballet 22m53s, Balas 22m58s, Oreille 23m, Dongues 23m5s, Metiffiot 23m9s, Recordier 23m12s, Brunasso 23m12s, Feitler 23m14s, Frossard 23m31s, Sarrazin 23m34s, Conjard 23m50s, Zamponi 24m3s, Caminada 24m4s, Monchal 24m12s, Hupfer 24m15s, Trimolet 24m24s, Agier 24m26s.

SS 31 : ST-SAUVEUR S/TINEE — BEUIL (22.41 km)
Vatanen 16m22s, Saby 16m35s, Blomqvist 16m38s, Biasion 16m43s, Toivonen 16m44s, Salonen 16m52s, Röhrl 16m54s, Snobeck 17m45s, Chomat 18m33s, **Chasseuil 18m53s (1st Group A)**, Andruet 19m3s, Dorche 19m13s, Balas 19m20s, Metiffiot 19m23s, 'Tchine' 19m32s, Gardère 19m32s, **Feitler 19m49s (1st Group N)**, Dongues 19m50s, Aymé 19m58s, Ballet 20m, Recordier 20m1s, Oreille 20m7s, Brunasso 20m7s, Panciatici 20m8s, Sarrazin 20m15s, 'Bilou' 20m27s, Conjard 20m30s, Frossard 21m1s, Zamponi 21m3s, Chazot 21m6s, Nielsen 21m8s, Auvray 21m10s, Guyot 21m12s.

SS 32 : PUGET THENIERS — ST-AUBAN (38.4 km)
Röhrl 27m19s, Vatanen 27m55s, Blomqvist 27m56s, Saby 28m6s, Salonen 28m12s, Snobeck 30m6s, Chomat 30m17s, Toivonen 30m26s, Biasion 30m27s, Andruet 30m27s, Dorche 31m7s, Gardère 31m54s, **Feitler 32m11s (1st Group N)**, **Chasseuil 32m46s (1st Group A)**, Balas 32m46s, Oreille 33m11s, Ballet 33m14s, Panciatici 33m31s, Brunasso 33m33s, Dongues 33m47s, Metiffiot 33m53s, 'Tchine' 33m58s, Ayme 34m1s, Sarrazin 34m12s, Zamponi 34'23s, Recordier 34m42s, 'Bilou' 34m45s, Conjard 34m55s, Auvray 35m6s, Guyot 35m13s, Chazot 35m16s, Brych 35m19s, Daniel 35m22s.

SS 33 : LES 4 CHEMINS-BIF D10/D17
Vatanen 26m 58s, Röhrl 27m 19s, Saby 27m 19s, Toivonen 27m 29s, Biasion 27m 42s, Salonen 27m 48s, Blomqvist 27m 51s, Snobeck 28m 55s, Andruet 30m 6s, **Chasseuil 30m 28s (1st Group A)**, **Dongues 30m 44s (1st Group N)**, Ballet 31m 11s, Chomat 31m 24s, Dorche 31m 27s, Panciatici 31m 42s, Feitler 31m 49s, Balas 31m 53s, Brunasso 32m 1s, Oreille 32m 28s, Metiffiot 32m 30s, Ayme 32m 34s, Sarrazin 32m 36s, Gardère 32m 37s, "Tchine" 32m 52s, Zamponi 33m 6s, "Bilou" 33m 08s, Recordier 33m 12s, Conjard 33m 37s, Niesel 33m 41s, André 33m 44s, Gaujal 34m 0s, Thuriot 34m 8s, Frossard 34m 15s.

SS 34 : LODA-LUCERAM (16.730 km)
Toivonen 14m 25s, Vatanen 14m 43s, Blomqvist 14m 46s, Saby 15m 2s, Biasion 15m 13s, Salonen 15m 17s, Snobeck 15m 45s, Andruet 16m 3s, Chomat 16m 17s, Dorche 16m 22s, **Chasseuil 19m 29s (1st Group A)**, **Brunasso 16m 40s (1st Group N)**, Feitler 16m 48s, Ayme 17m 7s, Dongues 17m 7s, Panciatici 17m 11s, Oreille 17m 15s, Gardère 17m 16s, Ballet 17m 19s, Conjard 17m 20s, "Tchine" 17m 21s, Balas 17m 21s, Zamponi 17m 39s, Sarrazin 17m 40s, "Bilou" 17m 40s, Recordier 17m 52s, Kuhiewein 17m 52s, Boubal 17m 58s, Caminada 18m 1s, Metiffiot 18m 3s, Brych 18m 5s, André 18m 8s, Röhrl 18m 13s.

TECHNICAL DATA

53rd edition of the Monte Carlo Rally.
Date: January 26th - February 1st, 1985.
1st round of the World Rally Championship for makes and constructors.
Rally commenced from six European towns: Barcelona, Bad Homburg, Paris, Monte Carlo, Lausane and Sestrières. Finish at Monte Carlo.
Route :
1. **Concentration run:** Covering approx 1,000 km/625 miles from each of the six European towns aforementioned, to St-Etienne.
2. **Classification run:** St-Etienne - Grospierres, 341 km/213 miles, divided into five special stages covering a total of 111.8 km/69.8 miles.
3. **Etape commune:** Grospierres - Grenoble -Gap - Monaco, 1,776 km/1,110 miles, made up of 17 special stages covering a total of 490.7 km/306.6 miles.
Final run: Monaco - Monaco: 838 km/523.7 miles, made up of 11 special stages covering a total of 258.2 km/161.3 miles.
The Rally covered a total of 2,955 km/1,846.8 miles, excluding the concentration run. All 33 special stages were covered, totalling 860.7 km/537.9 miles.
Entries: 131, **Starters:** 117; **Finishers** and **Classified: 69.**
Driving conditions: Generally dry, but with frozen snow and icy patches in certain areas. Four special stages were entirely snow-covered (SS9 and SS12).

FEATURES

Rally:
First time that the Rally met up at St-Etienne.
'Etape de classement' resumed.
The Rally was made a day longer.
Cars:
First participation for the Peugeot 205 Turbo 16, Audi Sport Quattro and the Citroën Visa 1000 Pistes at the Monte Carlo Rally.
The Lancia Rally made its first appearance in its more powerful configuration (335 bhp).
First time that Peugeot is the provisional leader in the World Rally Championship for makes.
Drivers:
First victory for Ari Vatanen at the Monte Carlo.
First Rally that Timo Salonen and Bruno Saby drove a Peugeot.
First Rally for Jean-Claude Andruet at the wheel of a Citroën.

MAIN RETIREMENTS

Chauche/Barjou (Citroen Visa 1000 Pistes), engine SS2.
Wambergue/Martin Dondoz (Citroen Visa 1000 Pistes), off road SS22.
Beauchef/Dubois (Ford Escort RS 1600i), engine SS25.
Séclier/Tzarewski (Renault 5 Alpine Turbo), steering SS27.

BEST RESULTS

	1	2	3	4	5	6	A	B
Vatanen	21	6	4	1	1	—	33	33
Röhrl	5	16	4	3	1	—	29	33
Toivonen	3	2	1	6	6	5	23	33
Biasion	3	1	1	3	6	6	20	33
Saby	1	2	4	7	11	4	29	33
Blomqvist	—	4	11	4	3	5	27	33
Salonen	—	4	8	6	4	7	29	33
Snobeck	—	—	—	1	2	2	5	33
Chomat	—	—	—	—	1	3	4	33

A: Number of placings in first 6.
B: Number of special stages covered.

SUCCESSIVE LEADERS

SS1: Vatanen
SS2 - SS8: Röhrl
SS9 - SS18: Vatanen
SS19 - SS26: Röhrl
SS27 - SS34 (finish): Vatanen

FINAL RESULTS

1. **Vatanen/Harryman (Peugeot 205 Turbo 16), 10 hours 20m 49s (1st Group B).**
2. Röhrl/Geistdorfer (Audi Quattro Sport), 10 hours 26m 06s.
3. Salonen/Harjanne (Peugeot 205 Turbo 16), 10 hours 30m 54s.
4. Blomqvist/Cederberg (Audi Quattro Sport), 10 hours 40m 11s.
5. Saby/Fauchille (Peugeot 205 Turbo 16), 10 hours 40m 45s.
6. Toivonen/Piironen (Lancia Martini), 10 hours 43m 16s.
7. Snobeck/Béchu (Renault 5 Turbo), 11 hours 43m 16s.
8. Andruet/Peuvergne (Citroen Visa 1000 Pistes), 11 hours 13m 12s.
9. Biasion/Siviero (Lancia Rally), 11 hours 13m 51s.
10. Chomat/Breton (Citroen Visa 1000 Pistes), 11 hours 20m 00s.
11. Dorche/Thimonier (Citroen Visa 1000 Pistes), 11 hours 43m 26s.
12. **Gardere/Bufferne (Peugeot 205 Turbo 16), 12 hours 07m 12s (1st Promotion).**
13. **Balas/Lainé (Alfasud Sprint), 12 hours 10m 22s (1st Group A).**
14. Chasseuil/Baron (VW Golf GTi), 12 hours 10m 55s.
15. Ballet/Vuillemin (Peugeot 205 GTi), 12 hours 19m 02s.
16. **Oreille/Oreille (Renault 5 Turbo), 12 hours 19m 54s (1st Group N).**
17. Panciatici/Sappey (Alfetta GTV 6), 12 hours 27m 16s.
18. Ayme/Ayme (Renault 5 Turbo), 12 hours 29m 34s.
19. Feitler/Demuth (Audi 80 Quattro), 12 hours 30m 13s.
20. Dongues/Rousseau (BMW 323i), 12 hours 31m 22s.

WORLD RALLY CHAMPIONSHIP (constructors)

(Results after first of eleven rounds)
1. Peugeot 18, 2. Audi 16, 3. Lancia 8, 4. Renault 6, 5. Citroën 4.

WORLD RALLY CHAMPIONSHIP (drivers)

(Results after first of twelve rounds)
1. Ari Vatanen (SF) 20; 2. Walter Röhrl (D) 15; 3. Timo Salonen (SF) 12; 4. Stig Blomqvist (S) 10; 5. Bruno Saby (F) 8; 6. Henri Toivonen (SF); 7. Dany Snobeck (F) 4; 8. Jean-Claude Andruet (F) 3; 9. Massimo Biasion (I) 2; 10. Maurice Chomat (F) 1.

PAST RESULTS (Last ten years)

1975: Munari/Mannucci (Lancia Stratos)
1976: Munari/Maiga (Lancia Stratos)
1977: Munari/Maiga (Lancia Stratos)
1978: Nicolas/Laverne (Porsche 911)
1979: Darniche/Mahé (Lancia Stratos)
1980: Röhrl/Geistdorfer (Fiat 131 Abarth)
1981: Ragnotti/Andrié (Renault 5 Turbo)
1982: Röhrl/Geistdorfer (Opel Ascona)
1983: Röhrl/Geistdorfer (Lancia Rally)
1984: Röhrl/Geistdorfer (Audi Quattro)

53rd Monte Carlo Rally (André Marzoli)

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POST BAG

WE WANT ASSET!

To all at GPI,
Hi, it's great to see you back. The tests in the first new issue were great. Keep them coming! Only one problem, where is Bernard Asset? Is he still with you?
Michael Cummings,
Elliott House,
Molyneux St,
London W1

Dear Michael,
It's good to know that you appreciate the new format. Bernard Asset has decided to focus his lens on other things apart from F1. Hopefully he will be camera in hand at selected GPs this season and we will naturally include his photos whenever we can.
Happy reading,
GPI.

KEKE PROFILE

Dear GPI,
I have bought GPI regularly since Brazil 83 and I would like to congratulate you for your professional style.
There is only one thing I would like to complain about and that is I am still waiting for a "Profile" on Keke Rosberg — the fastest F1 driver in the world.
Best wishes to all GPI readers.
Mauri Numi,
Kanervatie 9,
90650 Oulu 65,
Finland

Dear Mauri,
Thank you for writing in. We hope to have an article on your favorite F1 driver in the very near future.
Until then, Happy reading,
GPI.

MORE TECHNICAL ARTICLES

Dear GPI,
I'm glad to see you back. I have been buying GPI since the first issue and I hope the new production team will keep to the old style.
Please include more technical articles once every two months on subjects like tyres, aerodynamics, suspension, motors and so forth.
Once again, good luck.
Delio de Oliveira Antunes
Rua Paissandu, 395
Flamengo,
Rio de Janeiro 22210
Brazil.

Dear Delio
Will do!
GPI.

LANCIA PLEASE!

Dear GPI,
Well, it's great to see you back on the racks.
Your new style issue is great and excellently written, and it is quite simply the best magazine on motor sport, by far.
The January issue of GPI (No 88) had a first class article on the new Peugeot 205 Turbo 16. Can you do a similar one on the Lancia 037 or even the S4?
Andrew S Corfield
Valley View,
Broughton,
Nr. Biggar,
Lanarkshire ML12 6HF

Dear Andrew,
Compliments indeed, we're flattered!
We're hoping to do an article on the Lancia Rally shortly.
GPI.

YESTERDAY

Dear GPI,
I have always bought GPI throughout the years and I was obviously dismayed when it disappeared. Although happy to see it return at first, I am now at a loss to see how the new GPI can succeed financially, where the old one didn't. What has happened to ace photographer, Bernard Asset? He was always the best photographer in the GP reports.
Away from photographers to journalists. GPI fails to provide the quality that Keith Botsford, Didier Braillon and Mike Doodson used to bring. I also miss the "*Extra, Extra*" pages, when we got the truth from the drivers themselves. Lastly, why are there only three double spreads at each event? This was another good point of the old GPI.
Yours hopefully,
Gordon McCabe,
8 Clivedale Rd,
Woodley,
Reading.

Dear Gordon,
Sorry you don't appreciate the new format. If you read this, then it can't be that bad, can it?!
GPI.

This column belongs to Grand Prix International readers.

Dear Readers,
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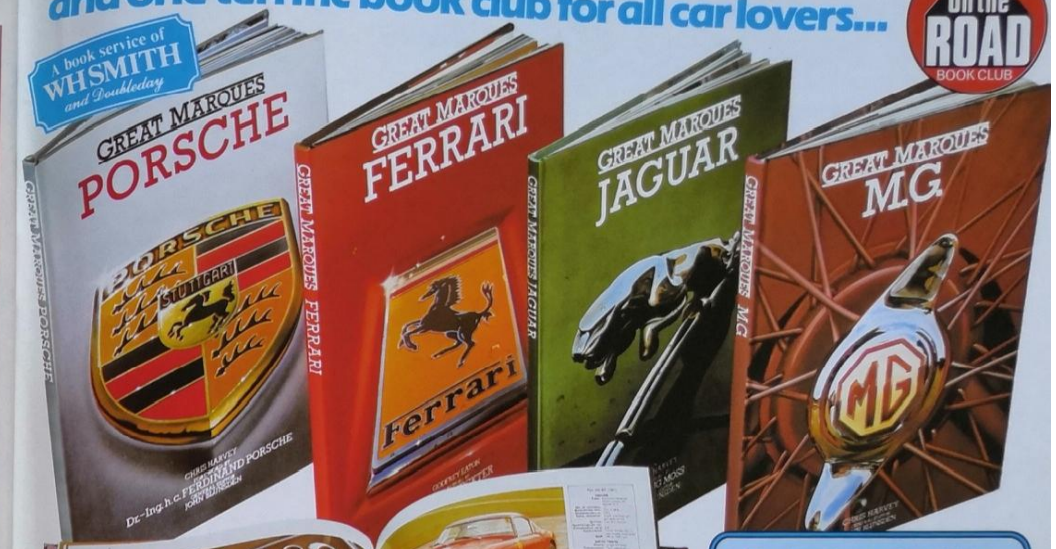

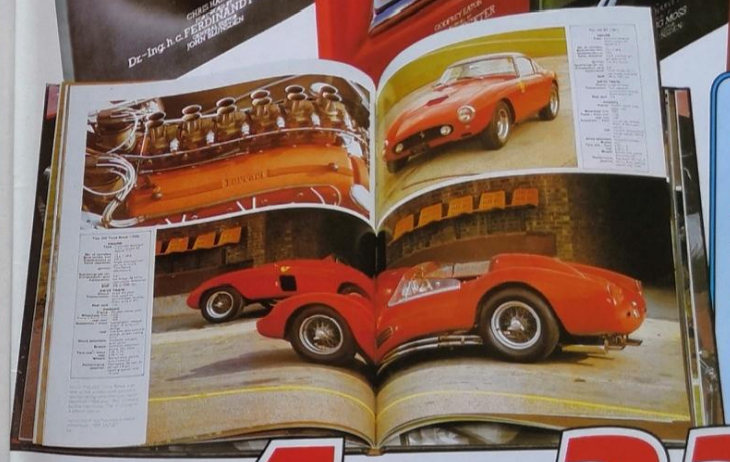

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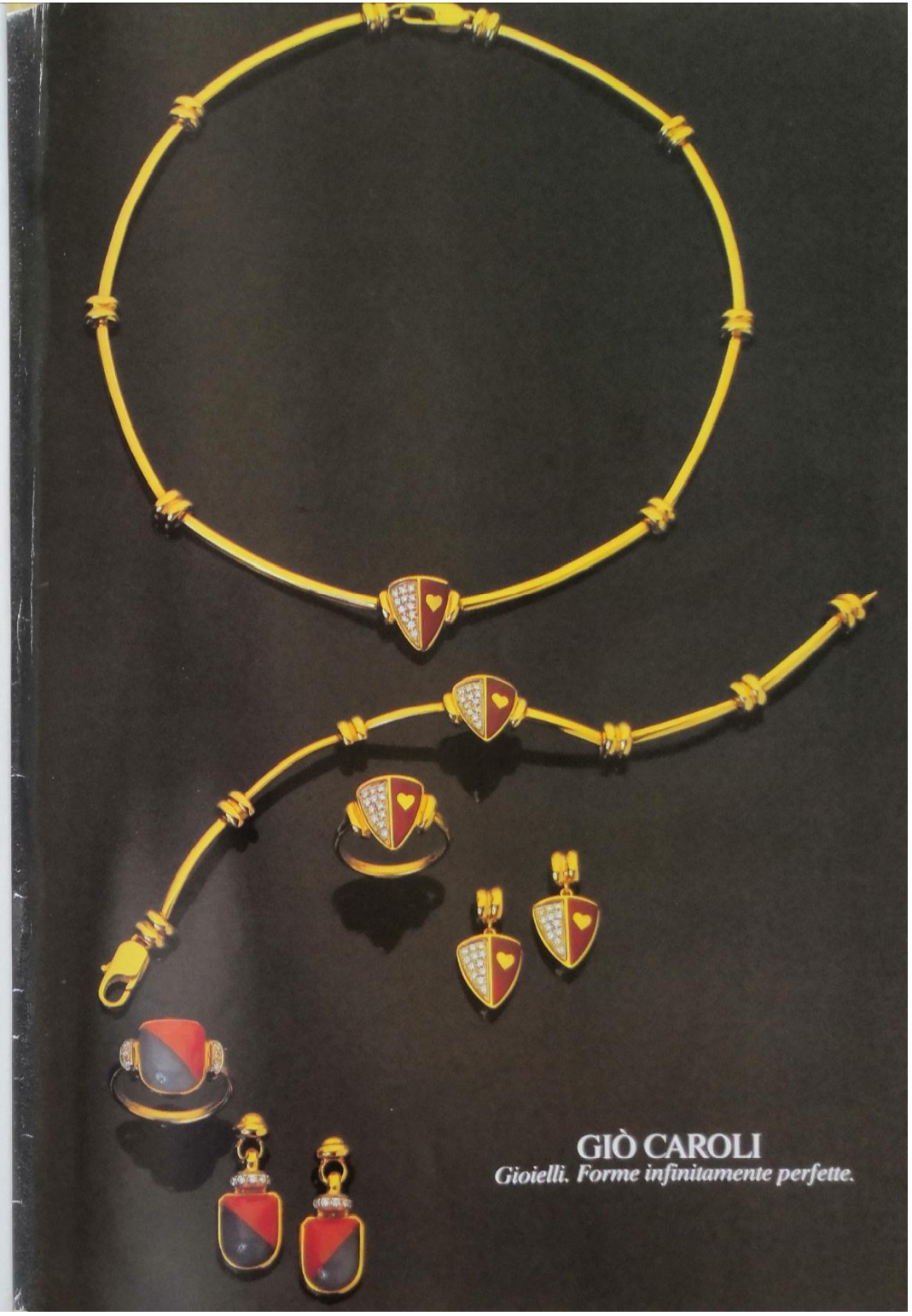

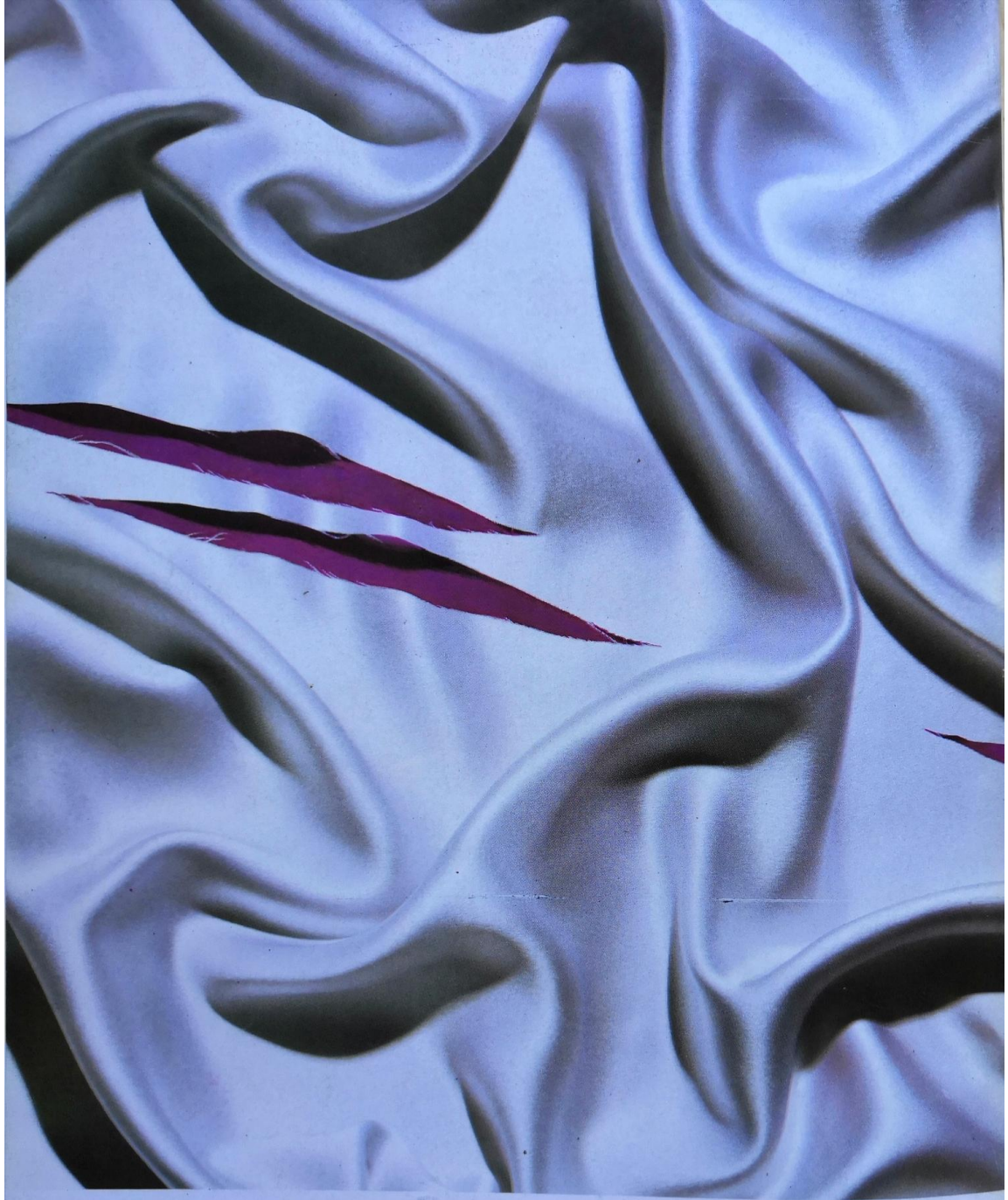

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